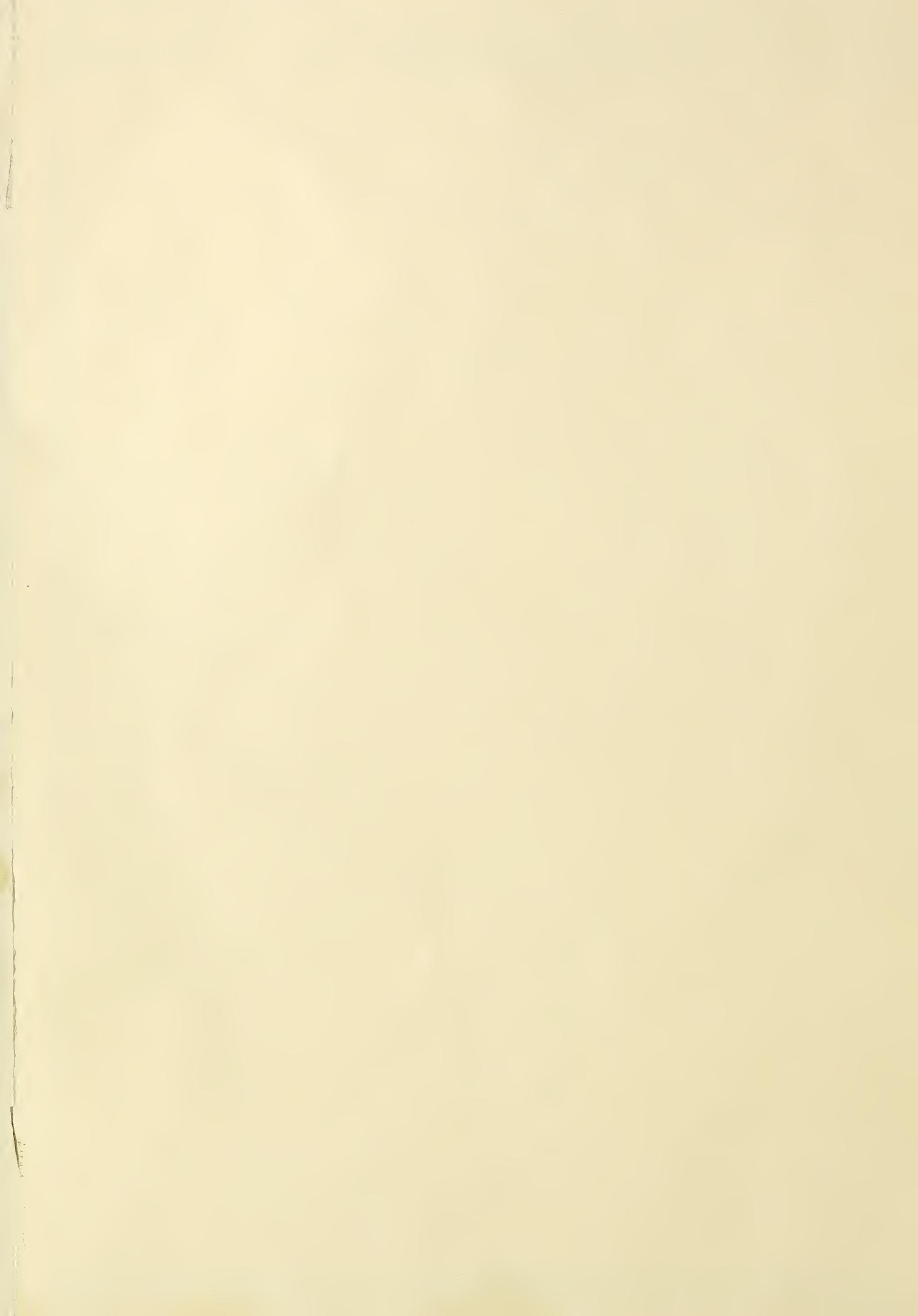


Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

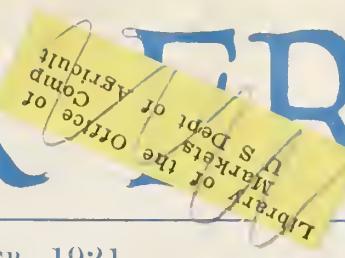


BETTER FRUIT

VOLUME XVI

NOVEMBER, 1921

NUMBER 5



Pride of the Fruit Stand

Features in This Issue:—

- Water Shipments of Pacific Coast Fruits
- Preparing the Boxed Apple for Distribution
- Use of Commercial Fertilizer in Montana
- Winter Injury to Berry Plants
- Success With Evergreen Blackberries

*20 Cents
The Single Copy*

BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, PORTLAND, OREGON

Subscription One Dollar per Year in the United States; Canada and Foreign, Including Postage, Two Dollars, Payable in American Exchange

Export Fruit Shipments to Europe

LET OUR FORWARDING DEPARTMENT HANDLE YOUR SHIPMENTS THROUGH PORTLAND

Our Services Include:

Rate quotations, booking of steamer space, accomplishment of rail ladings, supervision of strapping, payment of freight for shippers' account, writing of marine insurance and issuance and disposal of all ocean transportation documents.

Our Charges \$5.00 Per Car

OREGON PACIFIC COMPANY

Agents:

HOLLAND-AMERICA LINE

THE ROYAL MAIL STEAM PACKET COMPANY

Steamers Equipped with Cool Storage Compartments

TOYO KISEN KAISHA....., Service to Japan, China and South America

203 Wilcox Building

Phone Main 4565

Portland, Oregon

North Pacific Coast Line

Joint Service of

The Royal Mail Steam Packet Company—Holland-America Line

Fast Freight Service Between

VANCOUVER, B. C.—PUGET SOUND—COLUMBIA RIVER—SAN FRANCISCO—and
LOS ANGELES HARBOR

AND

LONDON—LIVERPOOL—GLASGOW—HULL—ROTTERDAM—AMSTERDAM
ANTWERP—HAMBURG and HAVRE

From Pacific Coast Ports

S. S. KINDERDIJK	Middle November
S. S. NEBRASKA	Late November
S. S. EEMDIJK	Early December
S. S. MOERDIJK	Late December

Loading

From Europe

S. S. NEBRASKA	Late October
S. S. MOERDIJK	Middle November
S. S. KINDERDIJK	Late December

Loading

***All Steamers Equipped with Large Coolrooms and Refrigerators for the
Transportation of Fish, Fruit, Cheese and Other Perishable Cargo***

For freight rates and space apply:

***The Royal Mail Steam Packet Co., Wilcox Bldg., Portland, Oregon—
Phone Main 4565***

Cables:

POUPART,
LONDON

Codes:

A B C
(5th Edition)
Marconi
InternationalBankers:
Merchants Bank of
Canada
Bank of Nova
Scotia, Etc.**T. J. POUPART**

(John Poupart, William Ravenhill)

Covent Garden, London, W. C. 2

REGISTERED



We are pleased to announce that we have arranged for Sam Birch to again visit all our shippers.

Members of

***"The Proof of the Pudding Is in the Eating"***

Last year, we operated for the first time in Northwest fruit, though we have handled many big shipments from British Columbia for a number of years.

We handled last year 225 carloads of Northwest fruit entirely on a consignment basis.

Apparently the pudding we offered last year was good, for our friends have come back for more, bringing many of their neighbors with them, so that this year we will ship to England something over 400 carloads, all to go through the Panama Canal.

Our Mr. Birch has opened permanent offices in Portland, Oregon, and will be glad to advise with anyone who wishes to enter the fine English market and avail themselves of the Poupart Service.

SPECIAL NOTICE

We have now opened a branch at Liverpool which will be conducted on the same lines as London. Growers can communicate direct with the manager,

T. J. POUPART
54 Stanley St.
LIVERPOOL

The Largest Firm of Fruit Salesmen in Great Britain

(ESTABLISHED OVER A QUARTER OF A CENTURY)

SALES BY PRIVATE TREATY ONLY (Gives best results)
COMMISSION THE EXCLUSIVE BASIS (Purchase propositions cannot be considered)

ADVANCES OFFERED TO COVER FREIGHT CHARGES

Special Facilities for Handling Consignments from Co-operative and Other Organizations

SPECIAL NOTICE

To care for our growing Pacific Coast business, we have opened offices at 807 Wilcox Bldg., Portland, Oregon, with Mr. Sam Birch in charge. Phone Broadway 5462.

A VALUABLE BOOK*"The Commercial Apple Industry of North America"*

Published by the Macmillan Company is a new book covering all phases of the Apple Growing Industry that "Better Fruit" highly recommends to apple growers or those who contemplate engaging in this occupation. Its authors are J. C. Folger, Assistant Secretary International Apple Shippers' Association, and S. M. Thompson, formerly Fruit Crop Specialist, U. S. Department of Agriculture. It is edited by L. H. Bailey, the well known authority on horticulture.

If you are interested in obtaining a copy of this valuable book send us \$3.50 and we will have same forwarded to you. Remit by postoffice money order or check to

Better Fruit Publishing Company
Twelfth and Jefferson Streets, Portland, Oregon

How You Can Get Better Fruit's Apple Packing Chart

BETTER FRUIT's apple packing chart printed on cardboard so that it can be hung in the packing house, will be mailed to anyone desiring it, on the following terms:

One card FREE with a new subscription to BETTER FRUIT.
One card without subscription _____.10
Twelve cards without subscription 1.00

BETTER FRUIT PUBLISHING CO.
Arcady Building Portland, Oregon

Warning to Orchardists!

How are your grades running? Have you many five-tier apples? If so, why? You perhaps will say "the freeze," but this is only true with some trees. The real reason is your orchard is running down slowly, but surely.

Not Like This

But Like This

The good years only lull you into false security. You have got to fertilize, and the quicker you make up your mind to this the better.

Fertilize the Right Way—

Fertilize the Marine Products Co. way. Fertilize the old-fashioned way. Fertilize with a complete fertilizer. Every natural manure is a complete fertilizer. Why experiment with one plant food when three are needed? Your limiting factor this year will not necessarily be your limiting factor tomorrow. Therefore, use the complete fertilizer and you can't go wrong.

Use Clark's Special Orchard Dressing

Six per cent nitrogen, 10 per cent phosphoric acid, 4 per cent potash, 100 per cent organic, which will invigorate bacterial action and will build up your soil and is always safe.

Made of Blood, Fish, Meat, Bone, Kelp.

Last Year We Gave You a Lot of Wenatchee Results; Now They Are Coming From Yakima and Grandview

JUST SHIPPED STRAIGHT TRAINLOAD TO YAKIMA

Read What Mr. Howe Says

Grandview, Wash., Sept. 17, 1921.
MARINE PRODUCTS CO.
Tacoma, Washington.

Dear Sirs:—
I used three tons of your Clark Special Orchard Dressing Fertilizer on my orchard, and have pleasure in stating that I got very fine results. My orchard was badly run down, and I thought the trees were dying, but this year they seem to have a new lease of life, and the fruit is the talk of the growers all around.

I shall certainly recommend your Fertilizer.
(Signed) LON R. HOWE.

Read What Mr. Sutton Says

Grandview, Wash., Sept. 20, 1921.
MARINE PRODUCTS CO., INC.
Tacoma, Washington.

Gentlemen:—
I used two tons of your Harris Special Orchard Dressing Fertilizer, and must say that it has given very satisfactory results. My apples are larger and higher colored where I have used it, and I intend to use it this year over my entire orchard, but expect to use Clark's Special Orchard Dressing Fertilizer, as I want a little more growth in my trees.

Very truly yours,
(Signed) ORA SUTTON.

Read What Mr. Towne Says

Grandview, Wash., Sept. 20, 1921.
MARINE PRODUCTS CO., INC.
Tacoma, Washington.

Gentlemen:—
I used one ton of your Clark's Special Orchard Dressing Fertilizer, giving it a rather hard test, but find that it has given excellent results, giving me larger and better colored apples, and I will use a lot more of it this year.

Yours for better fruit,
H. F. TOWNE.

These are in the Yakima district, and are the result of the first year's fertilizing. The accumulative effects are going to be far better. If you have had alfalfa for years and have a lot of nitrogen growth, then balance up with HARRIS SPECIAL. Analysis—1 per cent nitrogen, 8 per cent phosphoric acid, 10 per cent potash. This will overcome the open texture of wood and fruit, the bad color, the late maturity, the bad keeping quality, the susceptibility to extremes of temperature which always come with over nitrogenation.

Mr. Harris, special expert direct from the factory, will remain in Yakima for a limited period and will be glad to give growers the benefit of his advice. Don't delay. This fertilizer wants to go down in the fall. Cars are coming forward in November. Get your order in.

Marine Products Co., Inc.

TACOMA, WASHINGTON
Manufacturers

Dealers Wire for Open Territory

BETTER FRUIT

Pioneer Horticultural Journal of the Pacific Northwest

Entered as second-class matter April 22, 1918, at the Postoffice at Portland, Oregon, under act of Congress of March 3, 1879

VOLUME XVI

PORTLAND, OREGON, NOVEMBER 1, 1921

NUMBER 5

Water Shipment of Pacific Coast Fruits

By THE EDITOR

Experience has taught fruit growers of the Northwest that dependence on railroads alone as a means of transporting their crops to market in this country brings both disappointment and loss at times. It is encouraging, then, to find that water transportation is fast becoming a means of moving Pacific Coast fruits. Attempt is made in this article to show not merely the development of shipping by boat, but to point out as well the resultant benefits that come from more successful invasion of foreign markets.—EDITOR.

TWO weeks ago the first big cargo of apples shipped this season direct from the Pacific Coast to Europe was taken out of Seattle and Portland on the big ocean steamer Northumberland. The refrigerator cargo consisted of a little more than 100 carloads of apples and six or seven carloads of pears.

A few days later two more large shipments of apples going to Europe went forward on the British steamers Moliere and Cardiganshire. Early this month the steamers Woodarra and Nebraskan are due to load apples out of Northwestern ports for destinations in England and France.

Analyzed, these facts have important significance to fruit growers of the Pacific Coast. They mean that shipment of fruit by water routes is safely past the experimental stage and is to be more and more of a factor in the distribution of fruits grown here. They mean that shipping firms have come to realize the importance of fruit shipments and have met developments by fitting many of their boats with refrigerator space. They mean that Northwestern fruits have more firmly established themselves in certain European markets.

In short, these shipments of whole train-loads of fruit out of this section by boat represent an important advance in distribution and marketing of coast fruit crops. This advance, as it may be noted today, is one of real consequence—what it may mean for the future is pleasing to contemplate.

That shipment of Pacific Coast fruits direct to England and ports of Europe by

boat is a proven success and is certain to become increasingly popular is the belief of Sam Birch, representative in the Northwest of the great English fruit firm of T. J. Poupart. Mr. Birch, after a year of trial shipments of apples and pears from Washington and Oregon, last month opened a permanent office for his firm in the Wilcox building, in Portland. Directing operations from there he expects to develop a fruit export business of extensive scope.

The development of adequate and efficient refrigerator service by trans-Atlantic steamers between coast points and Europe was one of the factors that influenced Mr. Birch's firm to open a permanent branch in the Northwest. Last year most of the apple and pear shipments sent to his firm in London and Liverpool went by rail across the continent and were shipped by boat from New York, Montreal or Halifax.

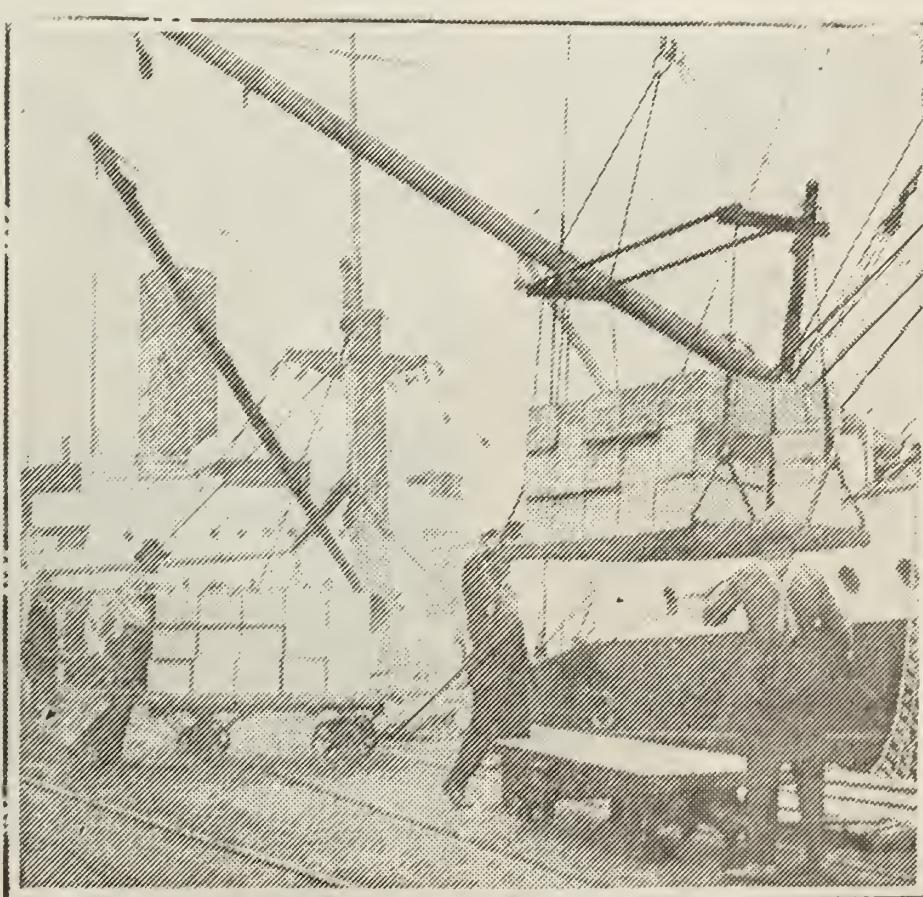
Without particular disparagement to the service given by the railroads, Mr. Birch

finds vital advantages in the all-water route, and almost without exception all shipments of his firm this season are going on trans-Atlantic steamers.

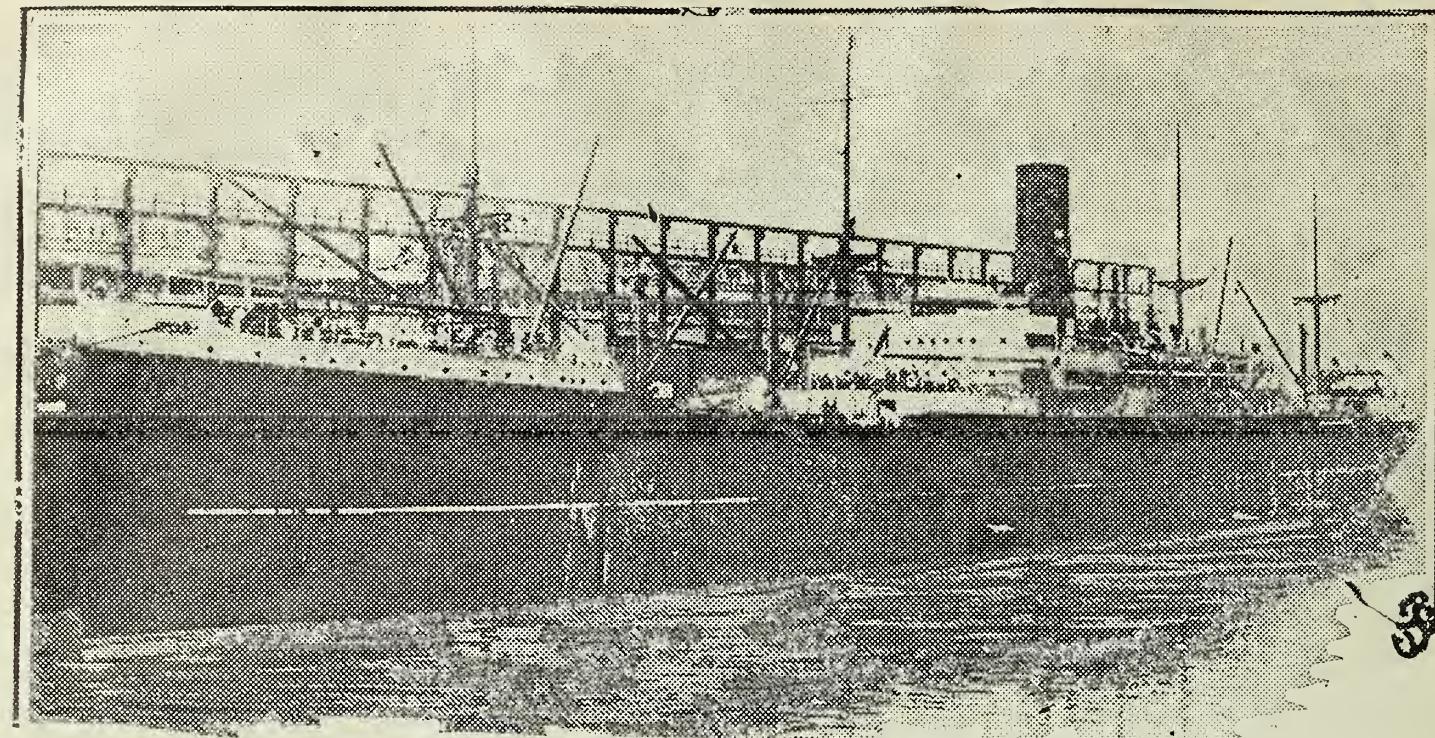
"In the first place," said Mr. Birch, discussing the problem, "neither I nor members of my firm knew how successful and convenient a thing the Panama canal is. Now we know of its advantages.

"Then, in the matter of handling, how much simpler the boat shipments make our problems. At the ports here I supervise the loading. In England representatives of our firm watch the unloading. There is no side-tracking and no shunting and bumping of the shipments in transit. Handling of the shipments is cut to a minimum. The fruit arrives in the markets of London, Liverpool, Glasgow, Southampton or other cities in excellent condition almost without exception."

The largest space reservation announced by Mr. Birch has been taken on the Nebraskan, on which he expects to ship 22,000 boxes of apples. Total shipments



Modern Methods of Conveying Boxed Apples Aboard a Vessel



Giant Steamer "Northumberland," Which Carries First Big Cargo of Northwestern Apples to England
(Photos with article by courtesy Portland Telegram)

for T. J. Poupart before the season has ended, Mr. Birch stated, will not be less than 200,000 boxes. Considering the fact that this is the first season the firm has had an established agency in the Northwest, this record will be a remarkable one. It should be proof that the markets of England are capable of absorbing an increasing supply of apples and pears from orchards of the coast country.

Mr. Birch has expressed himself as optimistic regarding fruit market conditions in England this fall. It is true that unemployment is as prevalent there as in this country, yet there is about equal purchasing power. And, what counts most, the Englishman has learned to appreciate the delicious flavor and quality of the apples grown here. He has learned, Pacific Coast growers will be delighted to note, to call for their apples when he wants the best.

The English, as is pretty well known, prefer the yellow apples. Newtown Pippins are their favorite, and Mr. Birch states that his shipments will include at least 60 cars of Newtwons. To the English there have come to be two kinds of Newtwons—those grown in California and those grown in the Northwest. In quest of his favorite apples the Englishman asks the shopkeeper merely for "Californias" or "Oregons," and he is given his Newtwons accordingly.

Other than the Newtown apples, shipments from here to England consist of Spitzenergs, Jonathans and Grimes Golden.

It is due Mr. Birch to state that his firm is building up its business on the consignment basis, but with advances to the growers that seem liberal in view of their general experience with commission

brokers. He gives proof of returns from last season's business that reflect much credit upon his firm and that were highly pleasing to the growers.

Apropos of the discussion of shipments by boat, Mr. Birch has stated that there will be a saving in costs this year that must be appreciated by the growers. Where the gross cost of landing a box of apples in England last season was \$1.66 he estimates that this season it will be but \$1.32. This is a saving that bulks large on extensive consignments. It is worth noting even that any strengthening of the English exchange market will mean extra profits for shippers.

Just as there has been a constant development of the market for Western apples and pears in England, there is reason to hope for somewhat similar development in other European countries and also in South American countries. Investigators in South America report that the apple is quite a favorite delicacy with certain peoples. California has been supplying a considerable trade there with her apples. Further expansion of South American markets and of any oriental or island nations to the west must, of course, be dependent on water transportation.

Again, if the house of representatives follows the lead of the senate in adopting the senate measure for free tolls through the Panama canal for vessels in American coastwise service, there will be further immediate increase in steamer shipments of fruit from Pacific Coast points to markets of the East. There is reason to hope for such action in congress.

In California the citrus fruit growers have enthusiastically taken up a movement to organize their own water transportation line as a means of putting their products

into Eastern markets. At Los Angeles the California Fruit Growers' Exchange has under way the formation of a \$2,000,000 steamship company to charter and operate a line of boats. It will be called the Producers' Steamship company. It is planned to assure the undertaking by getting contracts with growers of Southern California guaranteeing a yearly tonnage of 2,000,000 boxes, or 5,000 carloads. The capital stock is to be obtained by sale of 20,000 shares at \$100.

This California plan contemplates erection of a pre-cooling plant and wharf at San Pedro; purchase of trucking equipment; chartering of six fast ships and the procuring of adequate terminal facilities at Philadelphia, New York and Boston. Development of these plans will be watched with keen interest by fruit men of the West.

From these facts Western fruit men can hardly fail to draw pleasing conclusions. The facts point indisputably to the expansion of markets, the stabilizing of prices and the more economical distribution of fruit products of the Pacific Coast country.

The earliest shipment of new crop prunes sent from Oregon was dispatched from Riddle to Minneapolis the first week in October by the Oregon Growers' Association. A few days later the initial shipment of Willamette Valley Mistland prunes was started to Toronto, Canada. This was a straight shipment of 30s, packed in 25-pound boxes.

Prunes, for obvious reasons are unusually large this season. In some lots as many as half have graded 20-30s. At Ten Mile, Oregon, Mohr & Moss are said to have exhibited eight prunes that weighed a pound.

Preparing the Boxed Apple for Distribution

By RAYMOND PAILTHORP

Investigator in Marketing Fruits and Vegetables, in Collaboration With Harold W. Samson,
Specialist in Standardization, With Department of Agriculture

APPLE PACKING HOUSES may be classified in two groups, individual packing houses, which are more commonly known as ranch packing houses, and community houses, operated either by co-operative associations or by individuals. The percentage of the crop packed in community houses is increasing steadily. The same basic principles of construction and equipment are applicable to all types of houses and the equipment and methods of operation in the larger community houses are suitable to a large extent for use in the ranch houses. The fruit should be passed through the various operations in an orderly way, moving in one direction from the receiving point to the storage or car.

Community packing houses are especially desirable in the apple-growing districts of the Northwest, where the acreage is usually concentrated in the river valleys and where individual holdings with few exceptions are small, ranging from 5 to 15 acres. A group of growers by joining forces may easily finance the erection of a modern packing establishment. In a community house it is possible to perfect an organization of trained men to bring the grading and packing operations to a uniformly high standard. The operations are generally on a scale large enough to warrant the employment of competent workmen to supervise the various operations, and the cost of inspection is greatly reduced by having this work done at a central point. The cost of packing in a community house is not always lower than where the work is done by the individual, but it usually can be done more rapidly.

One important factor in favor of central houses is better conditions for the employment of labor. Very few of the smaller ranches have adequate housing and subsistence facilities for the care of their additional help during the packing season. Such living conditions do not attract laborers. Some growers have tried hauling the packers back and forth from town each day, but this practice is not satisfactory because much time is lost on the road. Then, too, help is usually at such premium that if one person is tardy in reporting the grower will detain the remainder of the crew waiting his arrival. As the work is generally paid by the piece the employees are inclined to seek employment where they can put in full time and have comfortable living quarters. In community houses it is also easy to provide for the comfort of the employees in the packing room. Such rooms when provided with an abundance of sunlight are very comfortable during the greater part of the day,

Advantages of community packing houses for apple growers of many sections of the Northwest were pointed out in an article presented last month. Here we have from the investigations of Professors Pailthorp and Samson further detail of the benefits and economies of such community plants. In addition, there are presented the definite and concrete requirements to be taken into consideration in planning and constructing the community packing house.—EDITOR.

but during extremely cold weather and in early morning artificial heat is needed. Some of the larger houses have steam or hot water heat for the offices, and pipes could be installed along the side walls of the packing room. Hot-air furnaces and oil or coal stoves can also be used satisfactorily.

To provide for the comfort of the employees while engaged in packing on hot summer days, it has been found advisable in some houses to place about 8 inches of mill shavings or sawdust in the ceiling to keep out the heat. If the roof is flat or the loft is not used for the storage of boxes, this insulating material may be placed loosely on the ceiling boards. This arrangement also serves to retain the heat in cold weather.

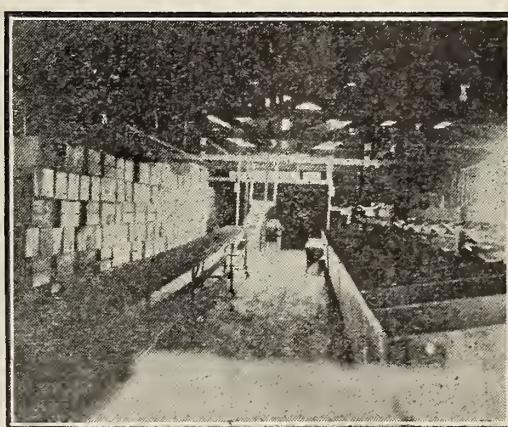
ALTHOUGH the better class of house is utilized usually for both packing and storage purposes, it should be understood at the outset that the fundamental principles underlying the construction of storage houses and of packing rooms are by no means identical. Packing in storage room is a far too common practice. A storage room should be well insulated, properly ventilated, without windows, and with re-

latively few doors for use in receiving and delivering the fruit. It should be used solely as a storage house. On the other hand, the best type of packing room is provided with abundant light and adequate operating space and should be equipped to furnish artificial heat during the cold weather for the comfort of the employees. Such a room is not fitted for the storage of either loose or packed fruit, as the quality of apples is invariably impaired by the high temperatures. In a large number of houses, proper provision has been made for the storage of packed fruit, but in comparatively few houses is the loose fruit storage separate from the packing operations.

The best site for a ranch packing house usually is found near the residence and other farm buildings, close to the main traveled road. Such a location is particularly desirable where there is a common storage house in connection with the packing house, as the storage house is usually air cooled and requires the attention of some one to operate the ventilators during the storage season. If the house is a considerable distance from the ranch house it is less likely to be cared for properly. In large orchards situated on level land it is often an advantage to locate the packing house near the middle of the orchard to reduce hauling distance for the loose fruit. In such cases it is necessary to provide a good road from the house to the main traveled road to facilitate the hauling of packed fruit. If the orchard is located on hilly land the house should be built at a point which will necessitate the minimum amount of up hill hauling. Sometimes a hillside can be utilized to advantage by placing the packing room on the second floor and providing for receiving the fruit on this floor on the upper side of the building. The packed fruit can then be conveyed by means of gravity conveyors to the storage room on the ground floor and loaded out on the lower side of the house. The receiving platform should be level with the wagon beds, and the loading platform should also be at this level or at the level of the car floor in case the house is on the railroad.

A community house, wherever possible, should be located on the railroad to eliminate the expense of hauling packed fruit to the car and to permit the loading of cars when weather conditions prevent hauling.

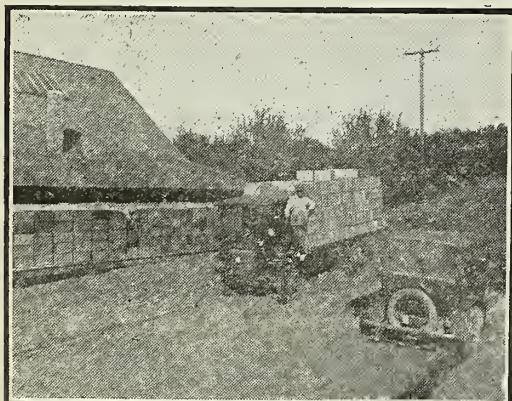
WOOD, brick, concrete, or tile are used in the construction of packing houses, the choice of materials being determined by the cost and the fire risk. As



Gravity Conveyor for Carrying Packed Boxes to the Lidding Press. Underneath Is a Slide for Carrying Empty Boxes to the Packer

the packing and storage rooms are usually parts of the same building, the same material is ordinarily used in the construction of each unit, although the storage room is insulated, and the packing room is not. Where the cost of excavating is high or where water is encountered in excavating, it is more economical and satisfactory to build a house without a basement. In the past, one-story houses have been more popular because the fruit could be handled more economically on one floor. It is, however, more expensive to construct a one-story house with a given floor space than to construct a two-story house with the same floor area, and in recent years the development of efficient mechanical conveyors has made it possible to elevate the fruit to an upper floor at a very low cost. In a two-story packing house built without a basement, one end of the upper floor should be used for packing operations, as it may be lighted from three sides. The remaining space may be blocked off by the use of an insulated divided partition and used for the storage of loose fruit. The ground floor is used for assembling and storing the packed fruit. To provide a clear floor space in the packing room the roof should be carried upon trusses. It is frequently desirable to provide covered platforms for receiving the loose fruit and loading out the packed fruit. Where these are used, the house should be so arranged that the packing room will not be cut off from the light.

It is impossible to determine, with accuracy, the size of a house to build to accommodate a given tonnage. Under the conditions which have prevailed in recent years, the transportation companies have been unable to provide a regular supply of cars, and a house designed to ship several cars a day may not receive any for several days; so it is necessary to provide an amount of storage space which, under other circumstances, might be considered excessive. A house built on a railway spur and designed to provide a large number of loading-out doors together with abundant packing facilities has proved most desirable, especially in some districts where, during the early fall, a large number of refrigerator cars have usually been held on the side-tracks and in the railroad yards waiting loading.



A Truck Loaded With 315 Packed Boxes of Apples

BETTER FRUIT

For the first few weeks of the shipping season, the railroads are able to meet all demands for cars, and of course they want to have this equipment loaded and in service. Houses constructed with these conditions in mind have been able to take advantage of the abundant supply early in the season. Other houses which control an equal amount of tonnage, but with limited packing facilities and relatively few loading-out doors, have been forced to ship later in the season when cars were scarce and often during severe winter weather when large losses were suffered.

THE most important feature in the construction of the packing houses, but the most commonly neglected, is the arrangement for proper lighting. The most efficient work is possible only when the room is properly illuminated at all times. Most people understand that dim lighting interferes with the accuracy and efficiency of grading operations, but comparatively few realize the glare of a direct light is equally bad. To avoid the latter condition, architects have sometimes advised the use of north and east windows, and if enough windows are used, such light is satisfactory during the middle of the day, but not intense enough for early mornings or late afternoons or for dull days during the late fall and winter.

Houses constructed to admit light through a narrow lantern or penthouse roof extending the length of the packing room are very common in some districts. This light usually is supplemented by a few low and rather small windows placed along the side and end walls, but such a method is very unsatisfactory and should not be allowed in future construction.

Hipped-roof skylights and high windows in sufficient numbers to light the interior thoroughly are the most satisfactory method of lighting. The hipped-roof skylight is preferable to a straight plain glass, as the style of construction permits it to receive some light throughout the day. The side windows should be placed 5 feet up the wall so that the light will not be blocked by the machines, conveyors, or stacked boxes, but will flood unobstructed to the center of the room. To light a packing room 100 feet long by 70 feet wide will require the use of continuous sash 4 feet high along the two sides and one end. A room 40 feet by 60 feet will require continuous sash of the same height along two sides only.

Where sizing machines are used, the sorting table is usually placed next to the partition between the packing room and the loose fruit storage, so that the sorters receive very little light from the windows at the opposite end of the room. To increase the amount of illumination at this point hipped-roof sky lights should be installed over each sorting table. These skylights should be made of translucent glass to diminish the glare of the sun on

November, 1921

bright days. They need not be larger than 3 feet by 4 feet in size. Where the house is constructed with a loft, light shafts or wells are used to admit the light and concentrate it directly over the sorting table. These shafts should flare so that at the bottom, which is directly over the heads of the sorters, the dimensions are the same as those of the sorting table. When hand tables are arranged down the center of a large packing room, a large hipped-roof skylight should be placed above to insure plenty of light for the graders. White paint is commonly applied to the light shafts and other parts of the packing room to intensify and reflect whatever light is available.

It is necessary to provide electric lights for use at night and on very dark days. The packing operations which can be conducted efficiently in a rather dim light can be illuminated by globes suspended by drop cords, but such provision is not satisfactory for the sorting table. For this purpose a rectangular-shaped reflector or hood, should be used. This reflector should be the same length as the table and about 18 inches wide. It should be suspended by ropes and equipped with a pulley so that it may be drawn up and away from the table when natural light is available. Such a reflector protects the eyes from all glare and also enables the sorting crew to concentrate their attention better on their work as a view of the workers on the opposite side of the table is obstructed. This reflector should be furnished with six 75-watt blue glass daylight nitrogen electric globes. The light from such globes is not glaring and is the best substitute for sunlight in examining defects and color.

In former years the apples, both loose and packed, were hauled in wagons, but motor trucks have replaced them to a very large extent. It is probable that the cost of this operation has not been lowered materially by the change, but the time and labor have been reduced, and both of these factors are exceedingly important during the packing season. As a general thing, individual growers can not afford to maintain trucks to be used only for a comparatively short season, and for that reason, they, and often the dealers and growers' associations as well, find it more convenient and economical to contract for this work.

See Us

At the Seattle Fruit Show

November 21-26

One of our Graders will be working

Cutler Mfg. Co.

353 E. Tenth St. Portland, Oregon

Set aside the Week of Nov. 21-26
for the
**PACIFIC NORTHWEST
FRUIT EXPOSITION**

The greatest display of the finest fruits ever assembled at one time and in one place will be shown at the Bell Street Terminal Exposition Building, in Seattle, during Thanksgiving Week.

The Exposition Building, 800 feet long and 70 feet wide, will be filled with the exhibits from all the fruit districts of the Pacific Northwest. There will also be a complete display of machinery, appliances and devices for use in the fruit industry. A part of each day is set aside for lectures and discussions of all the problems of the grower.

Twelve Thousand Dollars in Prizes

The Premium List, beginning with the \$1,000 cash and gold banner sweepstakes prize for the best collective exhibit made by any community, covers all sorts of competitions with awards in cash, merchandise, silver cups, trophies and banners—a chance for every grower.

THIS IS YOUR EXPOSITION

The purpose is to arouse all the people of the Pacific Northwest to a lively appreciation of the magnitude and importance of the fruit industry.

Not only better fruits, but better transportation, better facilities for distribution and marketing, are essential to the welfare of the industry.

*Reduced Rates on All Lines—One and One-Half Fare for Round Trip
From All Points in Washington, Oregon and Northern Idaho*

PACIFIC NORTHWEST FRUIT EXPOSITION
BELL STREET TERMINAL—SEATTLE

November 21 to 26 Inclusive

Winter Injury to Berry Plants

By J. L. STAHL

Horticulturist of Western Washington Experiment Station, With Arthur Frank, Plant Pathologist of the Station, as Collaborator.

ALMOST every year berries and other fruits in this section are injured by freezing to a greater or less degree. Sometimes the injury is more severe on one type of berry than another, depending on the condition or hardiness of the canes at the time of the lowest temperatures. The danger periods are usually in November and December on the bearing canes and roots and April and May for the young shoots. Injury which occurs from freezing the plants during the fall and winter months is usually classed as winter injury. That which occurs to new growing shoots in spring we consider frost injury.

There are many factors both natural and artificial which may play an important part in the amount or extent of winter injury throughout a locality. Oftentimes this condition cannot be avoided, but sometimes by study of the causes and careful cultural methods given it can be prevented. To a lesser degree frost injury can sometimes be prevented by practical methods.

Some of the factors which produce a tendency toward injury by frost are:

Late irrigation or early fall rains; poor drainage; continued cultivation late in the season; neglect to thin young canes; late summer fertilizing; excessive fertilization; warm, wet fall followed by low temperatures; summer drought, producing weak canes; late frosts, injuring new shoots.

Some of the factors which have a tendency to resist or avoid winter injury are:

Good soil drainage; good air drainage; frequent cultivation during the early growing season; early normal ripening of canes.

IN SOIL where irrigation is necessary the soil moisture and ripening of the cane problems can be largely controlled. Sometimes the natural outlet of cold air is

barred and obstructed by a few trees which can be cut out and the frost pocket removed. Thinning of young shoots during the growing season will allow greater air and sunshine contact and consequently an earlier ripening of wood in the fall. Removal of old canes after the picking season will also aid in this. Immature canes are easily injured by low temperatures.

Fertilization is an important practice that should receive careful study. Excessive fertilization of a neglected or abused soil is dangerous. Overfertilization causes overgrown, sappy canes readily broken, easily frozen in winter and soft berries.

There are many types of fall and winter freezing. Some of them are:

Freezing of sappy canes in early fall; freezing of canes and roots from extreme low temperature; freezing of sappy canes near the ground line in the early spring; frost just before the blossom time, producing a blight on the flower stem; frost during the blossom time killing the flower organs; frost of new shoots in the early spring; frosting of new shoots, causing a breaking down of pith cells.

It does not take a plant specialist to recognize some of the symptoms of winter or frost injury when they are once known. Some of them are:

Excessive shedding of bark on the lower part of the cane; whitening of the entire cane; excessive brittleness of the cane in the early spring; dead or rotted roots; chocolate-colored pith in lower part of the cane; dry pith with a separation of the cells; water soaked appearance of the inner bark; sour sap odor or taste; dead terminal growth; dead buds; wilted shoots or buds immediately after starting out; blackened or wilted new shoots; brown or blackened fruit stems; blackened flowers.

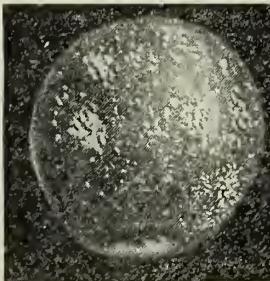


How to prevent the "blotch" or "burn" of the spray on fruit

Observe this study in contrasts. The apple at the left was sprayed with Arsenate of Lead—a wonderfully good spray. But the user neglected to mix "Spray Spread" with it. Below is a similar apple—sprayed with the same kind of spray—but Albatross Spray Spread was mixed with the spray. Note the difference—the "lead" dried on the FIRST apple in spots—or blotches. The

second apple received an equal amount of protective spray—but it spread over the apple in a thin film. Appearance and marketing appeal of the apple is thus retained. The pictures tell why Government experts are so enthused over "Spray Spread"—why experienced horticulturists say it has NO equal for spreading an "arsenate of lead" spray.

Note the "blotch" or "burn" of the lead on this apple



Note the uniform, adhering film on this apple

ALBATROSS SPRAY SPREAD

(Calcium Caseinate Compound)

Quality Features:

1. Very finely ground—always uniform.
2. Quickly Soluble.
3. No lost time.
4. Protects fruit with uniform coating.
5. Does not injure foliage.
6. Recommended by experts.
7. Guaranteed by manufacturers.

Directions sent with each order



Note the uniform, adhering film on this apple

PACKAGES AND PRICES

200 lb. Bbl.	Boxes	2 lb. Pkgs.
22¢ lb.	24¢ lb.	25¢ lb.

Freight prepaid to Northwest points.

Note: If you use Casien, Albatross Superfine, is the brand to buy. Very finely ground—quickly soluble when mixed with alkali.



—
for
storage plants,
packing sheds,
etc.

During the last six years a very large proportion of the major industrial plants, warehouses, lumber mills and canneries (list on application) have been made "spick and span" with Albatross Cold Water Paint. This paint is very economical to use—dries snow white—will NOT peel or rub off—retards fire—easy to apply—and when properly applied, reduces insurance rates. Has remarkable spreading and covering qualities—will work over wood, rock, plaster or other material. For almost any kind of commercial interior, Albatross Cold Water Paint is unequalled. Extensively used in the fruit world for storage plants, packing sheds, etc. Tell us your requirements—we can meet them to your complete satisfaction. * * * General Basic Products Co., Sole Manufacturers, 2926 16th Ave. S.W., Seattle, U.S.A. Dealers: Address us for attractive sales proposition.

APPLE GROWERS AND SHIPPERS! ATTENTION!

Our modern up-to-date cold storage rooms under supervision of cold storage experts are available for apple storage.
We are situated to handle apples in transit by rail or water.

For Rates and Particulars Apply to

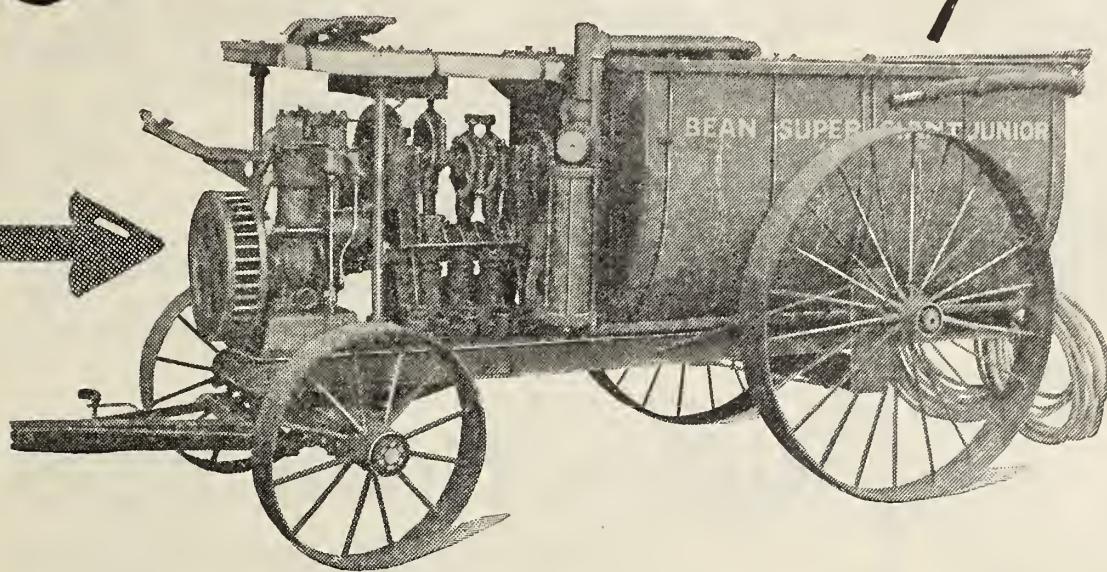
Fourth Street Warehouse & Cold Storage Company

PHONE BROADWAY 4300 and 1850

FOURTH AND HOYT STREETS

PORTLAND, OREGON

"Bean" SUPER GIANT JUNIOR sprayer



Greater Pressure and Larger Capacity Does Quicker, Better Work at Less Cost

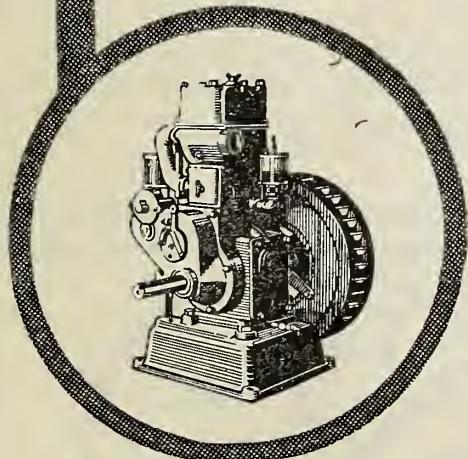
Adequate equipment is absolutely necessary for thorough spraying. It is impossible to thoroughly spray a large acreage with one small pump. There is some one application on all fruit—especially on apples—which must be made within a very limited period. Often the loss that results from failure to get the trees sprayed in time is far greater than the cost of adequate equipment.

The Bean Super-Giant Junior with its nozzle capacity of 14 gallons a minute and its 300-gallon tank, does 50 per cent more work in a given time than the old-type outfit with its 200-gallon tank. You not only make a big saving in the cost of spraying, but you get the material onto the trees when it does the most good.

The New Bean 6 H.P. Engine A Feature of the 1922 Bean Line

A big advance step in the development of sprayer power. This dependable engine was created by Mr. E. B. Cushman, famous as a designer of successful gas engines, and is undoubtedly his finest achievement. Compact, light in weight, and so perfectly balanced that it runs remarkably

free from vibration even under full power. Can be quickly and easily made available for other power jobs when sprayer is not in use. Can also be used to replace the engine now on your rig, if you want more power and higher pressure.



Sign and Send the Coupon for New Bean Catalog

It illustrates and describes the entire Bean line for 1922, from the reliable little Bean Simplicity with a capacity of $4\frac{3}{4}$ gallons a minute to the Bean Super-Giant with a capacity of 20 to 25 gallons a minute. There is a Bean that exactly fits your requirements.

BEAN SPRAY PUMP CO.

Originators of the First High Pressure Spray Pump

19 Hosmer Street
LANSING, MICH.

118 W. Julian Street
SAN JOSE, CALIF.

19 Hosmer St., BEAN SPRAY PUMP CO.
118 W. Julian St., Lansing, Mich.
Mail to address above, San Jose, Cal.
Name _____ Please send your "Sprayer Catalog"
Street _____
Town _____
State _____
Kind of Fruit Grown _____
No. of Acres 50-53

Car Shortage Injures Apple Growers

By THE EDITOR

DURING the current apple marketing season nearly every section of the Northwest has been hit at some time by a serious shortage of cars necessary to handle the crop. This is not a new situation, but is none the less aggravating to growers and shippers, because they had been through the same experience before.

Early in October a very serious shortage of refrigerator cars was experienced in the Wenatchee district. Several of the leading warehouses stopped receiving apples, while in others the crop was piled to the roof. Reports classed the situation as unparalleled for so early in the season, as less than 10 per cent of the crop had been handled up to that time.

Shippers charged that though the Great Northern railroad had been offered several thousand empty refrigerator cars before the beginning of the season, it had turned down the offer rather than pay the per diem rental to owners of the cars. The shippers talked of damages running into millions of dollars.

The Wenatchee Valley Traffic association promptly took up the matter by authorizing employment of a firm of attorneys of national reputation to look into aspects of the American Railway association car pool and frame action for damages. A representative was sent before the interstate commerce commission and other steps were taken to break the shortage and minimize resultant losses.

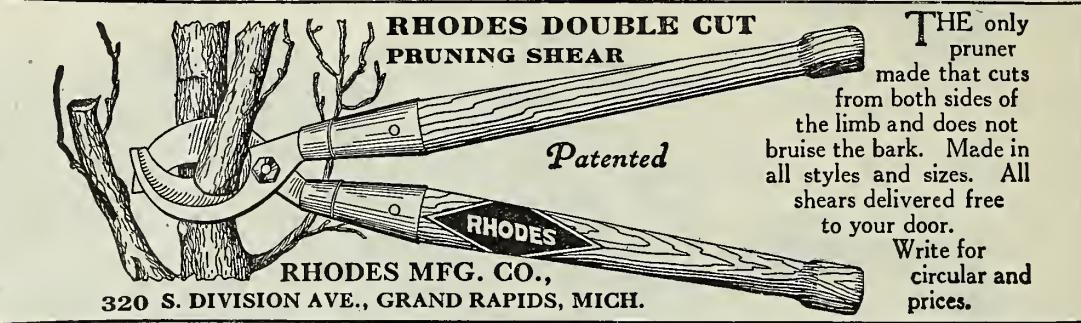
At the same time reports from the Payette valley, in Idaho, showed that there were 400 cars of Jonathans and other apples there ready to be shipped, with no cars available.

About the third week in October it was reported from Salem that acute car shortages existed in most of the apple growing districts of Oregon. Appeals were con-

stantly reaching the public service commission calling for any possible relief. The commission sent letters immediately to the various lines serving both Oregon and Washington territory, calling attention to

the complaints and urging utmost co-operation in meeting the shippers' needs.

It is a little early to know what relief, if any, the railroads may succeed in providing. Whatever they may accomplish, however, it is certain that the apple growers of the Northwest will have suffered extensive losses because of the shortage.



Ridley, Houlding & Co.

COVENT GARDEN, LONDON

WE ARE
Specialists in
Apples and Pears

CABLE ADDRESS: BOTANIZING, LONDON

Codes: A. B. C. 5th Edition and Modern Economy

"CARO"
fruit

WRAPPERS

This
is the
POINT

"CARO"
PROTECTS

"Caro" Protects—Caro" Prolongs the Life of Fruit—Why?

CHEMICALLY TREATED, "Caro" from DessoCARE (to dry up)

FRUIT MATURITY is retarded by cold or refrigeration and hastened by heat or atmospheric exposure.

The soft fibrous silk-like texture of "Caro" provides just sufficient ventilation to retard the ripening process.

FRUIT DECOMPOSITION starts from a bruise which opens tiny holes and permits juice to escape and BACTERIA to enter. "Caro" clings closely and dries up the escaping juice. "Caro" ingredients harden the spot, kill the BACTERIA, arrest the decomposition.

United States Distributors, AMERICAN SALES AGENCIES CO., 112 Market Street, San Francisco, California

Seattle Fruit Show

THE premium list of the Pacific Northwest Fruit Exposition, to be held at the Bell street terminal in Seattle, November 21-26, is being distributed to fruit growers of the northwestern states. Entries for district display contests are announced as having closed October 15. For the 10-box contest entries will close November 10, and for plate exhibits on November 19.

For the district or community display, the first prize is \$1,000 and a gold banner; second prize, \$500 and a silver banner; third, \$100 and a silver cup; fourth, \$100 and silver cup; fifth, \$100 and a suitable trophy. For this class of exhibits will be allowed 400 square feet of free space. Entries have closed.

The best display by an individual grower, for which 200 feet of free space is allowed, will be given a \$500 merchandise prize. Entries closed November 1.

The one-box prizes are \$3, \$2 and \$1. The five-box prizes are \$15, \$10 and \$5; the ten-box prizes are \$50, \$30 and \$15. In this contest prizes are provided for 23 varieties of apples in all. Plate exhibits of apples draw prizes of \$2 and \$1.

There are single box and plate contests for 12 varieties of pears, with prizes ranging from \$3 to 50 cents. Prizes are also offered for other kinds of fruits, and for nuts, evaporated fruits, home-processed fruits and cranberries.

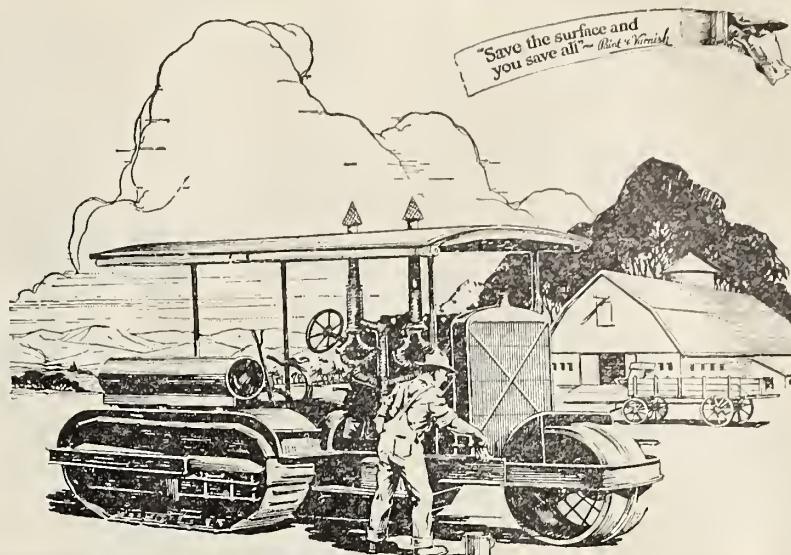
No entry fee is charged for any competitive display, large or small.

Prune Confections

PRUNES, dried and sugared in Strasbourg, France, and on sale at confectionery stores in Germany at 40 marks a pound, are most delicious, according to Dr. F. A. Magruder, associate professor in political science at the Oregon Agricultural college, who, accompanied by Mrs. Magruder, spent the summer in Europe. The price, equal approximately to 50 cents a pound in American money, is a little high for the German pocketbook at the present time, he says, which keeps the confection from being as popular as it would be at a lower price.

In Oregon, however, Dr. Magruder sees no reason why prunes cannot be made a very popular confection. The European recipe might well be copied, he thinks, and thereby create a much larger demand for the Oregon prune crop.

Figs and prunes boiled separately and served together, and prunes stewed with cinnamon bark, are other ways of preparing the fruit which Dr. Magruder found in Europe and on the boat. He brought a sample of the prune confection back to Oregon Agricultural college and delivered it over to the horticultural department that it might be examined and the advisability of its preparation made known.



Longer Life For Tractors Wagons, Silos and Farm Implements

PROPER paint protection will preserve your farm tractors, vehicles, silos and various agricultural implements and machinery. Such protection is vitally important to you because it is economical.

Constant exposure to all kinds of weather tends to materially deteriorate the usefulness of all farm implements and buildings. A protective coat of good paint will make them last longer, look better.

Buy Good Paint

Always buy the best paint—it is more economical—it costs less in the end.

Good paint is easier to spread

and so goes farther. Besides it lasts five or more years longer than cheap paint, and always looks better.

So when you figure *labor, square yards covered, lasting qualities and appearance*, cheap paint is a great deal more expensive than good paint. It pays to invest in quality, when quality means economy.

Remember that Fuller makes a "special paint for every purpose." No matter what you have that needs painting there is a Fuller product made to cover it.



Fuller's SPECIFICATION Farm Paints

House Paint - Barn & Roof Paint
Wagon Paint - Rubber Cement Floor Paint

Manufactured by W. P. Fuller & Co., San Francisco

Pioneer Manufacturers of Paints, Varnishes, Enamels, Stains and
PIONEER WHITE LEAD for 72 Years

Branches in 16 cities in the West--Dealers everywhere--Established 1849

Send Coupon For Interesting Book

FREE

Mail coupon for "Save the Surface"—a free book that tells of the importance of good paint.

We'll send also our booklet describing Fuller's Specification Farm Paints, Varnishes, etc. Send coupon now. Find out what good paint means to you.

W. P. Fuller & Co.

Dept. F. 19, San Francisco.

Please send me, without charge, a copy of "Save the Surface" and your booklet of farm paints and varnishes.

Name.....

Street.....

City..... State.....

Success With Evergreen Blackberries

ON HIS farm on the Pacific Highway, just outside of Gervais, Oregon, Sam Brown has 35 acres of evergreen blackberries which were planted from tips in November, 1916. In 1919 the crop amounted to 15 tons. In 1920 the crop was very light because of frost. This year Mr. Brown harvested 125 tons and he is confident that when his yard comes into full bearing he will obtain a yield of 200 tons a year.

Recounting his experience with the evergreens to The Salem Statesman, Mr. Brown said that, contrary to general opinion, they are hard to start. It is as difficult to start them as it is to kill them when thoroughly started. He advises the beginner to use tips for planting and not suckers.

Then cultivate each year, just the same as loganberries. The only difference is in the trellising. Evergreens will respond as well as or better than logans.

He planted in rows eight feet apart and 16 feet apart in the rows. The posts ought to be four feet three inches high. He made his a little higher, but he is going to hammer them down, because posts higher than that make the top wire so high that the picking is difficult by women and children. Reaching too high tires them and retards the work.

There are four wires for evergreens, the top wire No. 10 and the bottom wire No. 12, and the wires are 12 inches apart. He uses cross-arms and small slats one by one and five-eighths inches, notched for the wires. The vines lay over one slat and under the next.

MR. BROWN uses tractors in cultivating. He has two tractors. Each tractor pulls a plow and two discs, the discs following the plow—the cultivating being done all at one operation. The ground should be smooth. Do not hill up. The hilling up will make the evergreens as well as the logans crawl up to meet the hilling. Forces were at work in the evergreen vineyard of Mr. Brown, last month, cutting away the old vines, which will be burned, and getting ready to train the new canes that will bear the berries next year.

Mr. Brown has 85 acres of loganberries. He has also a young filbert orchard of 35 acres, and he is going into walnuts, gradually. So he knows what he is talking about when he says it is more expensive to start an evergreen than a logan yard. It takes more wires and larger and more expensive wires. The evergreens are very heavy, and require strong wires. Then it takes longer for the evergreens to come into full bearing. A good sized crop may be taken from loganberry vines the third year, while not a great deal may be expected in the way of profitable yields from evergreen vines till the fifth year.

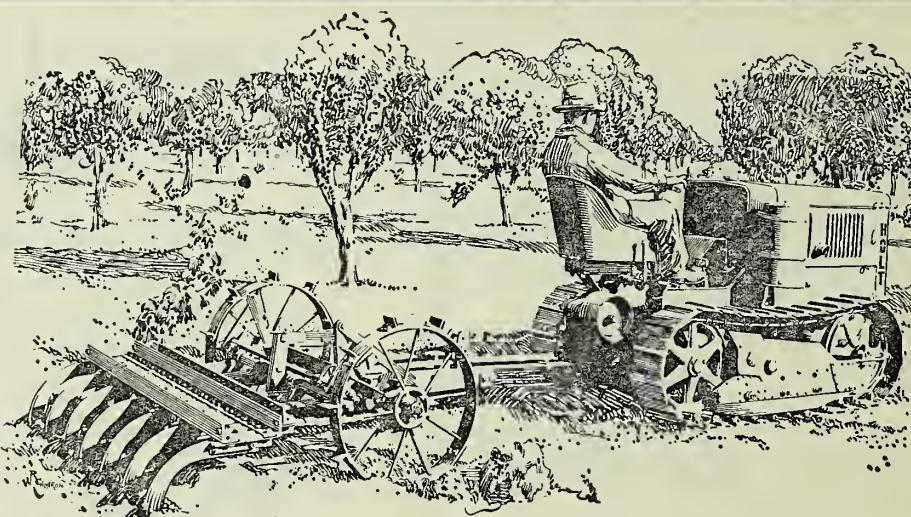
This means more preliminary labor cost, and rent or tax cost and interest cost.

But the evergreens, under favorable conditions, yield more than logans. The reader will observe that Mr. Brown is expecting about 12,000 pounds to the acre from his evergreens annually. Some evergreen vines have yielded over 16,000 pounds to the acre. Some small yards did this year in the Salem district. Yields run up to 22,000 pounds an acre on beaverdam land.

Loganberries and evergreen blackberries make good succession crops. The picking of the logans is done and out of the way

when the evergreen harvesting starts. Mr. Brown started his loganberry pickers June 27. He finished the blackberry picking Saturday night, September 17, getting 225 tons of loganberries and 125 tons of evergreens. He has two trucks, and he helps his neighbors deliver their crops. His trucks hauled to market during the season about 700 tons of berries, half his own and half for his neighbors.

Mr. Brown has about 200 pickers during the loganberry harvest and 100 during evergreen blackberry harvest; part of the same crew, just moving from one yard to the other. The season is longer for picking evergreens than logans. He keeps five steady men the year through, and six extra men during the summer.



At last—the supreme Small Tractor

CATERPILLAR
Reg. U.S. Pat. Off.

T-35 Tractor

FOR four years Holt experience and skill have been devoted to the production of this wonderful little tractor. During that time Holt has designed, built and discarded small tractor models that surpassed existing standards, but fell short of the high ideal Holt had set for a small "Caterpillar" Tractor.

To limit size without sacrificing power; to lessen weight without imperiling strength; to maintain, above all, the Holt standard of economical, dependable, long-lived performance—that was the Holt ideal. Correct design and the development of new qualities of steels and better methods of heat-treatment made this achievement possible.

Model T 35 "Caterpillar" Tractor is new, but new to the public only. It has been tried, tested and proven. It possesses, in fullest degree, all those qualities that have made the name "Caterpillar" supreme in the tractor world.

"Caterpillar" T 35 Tractor is only 48 inches wide and 52 inches high, weighs but 4000 pounds, yet develops a liberal surplus of power over its 14 drawbar-horsepower rating. It is of marvelously simple design, easy handling, all working parts fully enclosed yet readily accessible.

You will want full information regarding this latest Holt achievement—a post-card or letter request brings it to you—write today.

Ready for Delivery

November 1

Deliveries of the T-35 model begin November 1. Limitations of production make it advisable to book your orders at once, even if you do not want immediate delivery.

The Holt Manufacturing Company

Stockton, Cal.

Peoria, Ill.

Los Angeles, Cal.

San Francisco, Cal.

Spokane, Wash.



Six of his men have been with him six years and one man eight years. They know how to go ahead with the work, and there is something doing every day in the year.

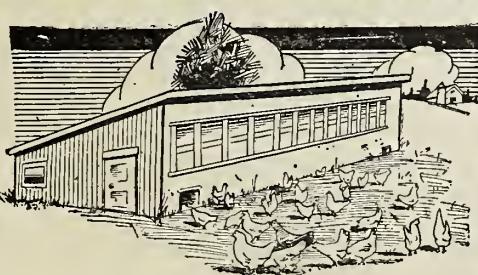
THE Brown farm is the old home place. His is a case of the younger generation sticking with the old farm and developing it into greater productiveness. A couple of years ago Mr. Brown was offered \$750 an acre for part of his loganberry vineyard. He refused the offer. It has been said that the farm, in the early settlement of Oregon, was sold for the price of a Hudson's Bay shotgun. But shotguns were high in those days, and land for preemption was plentiful—and loganberries and evergreen blackberries were unknown.

Mr. Brown has a neighbor, Joe Nibler, the pioneer in the cultivation of evergreen blackberries—at least the pioneer in the Gervais neighborhood. Their cultivation is a new thing. Mr. Brown got the evergreen blackberry "bug" from his neighbor, Joe Nibler. Picking from the trained and cultivated vines is easier and cheaper. The berries are better. They sell higher 1 to 2 cents a pound higher. They have become the great pie berry of America, and there is no telling how big is their future.

Thank You!

"I could not afford to do without Better Fruit any more than I could do without my sprayer. They are both specialists in their respective callings."

—Excerpt from letter of J. R. Allen, Neppel, Wash.



SASH AND DOORS

O. B. Williams Co.

1943 First Avenue South, Seattle

Chicken House Sash
20 in. wide by 25 in. high, 80c
A dozen different sizes in stock for immediate shipment

Sky Lights for Chicken Houses
36 in. by 40 in.; price glazed, \$2.00
This is the size recommended by the Western Washington Experiment Station—we carry them in stock for immediate shipment. Sash and Doors for all purposes at lowest prices. All orders receive prompt attention. Our large illustrated catalogue No. 19, showing full line of building material and built-in fixtures for the home, free on request.

O. B. Williams Co.
Established 1899

Frost Insurance

\$1.15 per hour per acre

"Used 27 Scheu Heaters to acre on the night of April 25, 1921—temperature outside of orchard 23° raised to 30° and 31° inside. I have a full crop in area covered by the heaters," writes W. C. Stone, Prop. Squaw Butte Orchards, Emmett, Idaho.

Scheu Smokeless and Canco Heaters

Give positive protection. Operating cost \$1.15 per acre per hour. Temperature as low as 16° successfully raised above danger point. Used by growers the country over. More than a million Scheu and Canco heaters now in use. Heaters cost 36c up. Order early to get frost protection next spring.

Write for free 48 page book—"Frost Insurance." Resident agents wanted.

Orchard Heater Dept. C
WHITING-MEAD COM'L. CO., LOS ANGELES

The New McKay Disc Orchard Plow

Here is the latest and most improved development of the disc plow and subsoiler combined. It has been designed and built to embody every improvement. Its ease of handling and its greater adaptability to every condition of orchard, grove, vineyard or open field tillage are outstanding points that insure its increased utility.

THE ORCHARD PLOW AND SUBSOILER OF GREATEST UTILITY AND PROFIT

The McKay disc plow has been thoroughly tested under most difficult conditions.

The patented hitch permits plowing close to trees, throwing soil either direction. Front and rear discs cut outside of wheels, thus allowing closest plowing to and from trees and vines. Greatest offset without side draft on tractor. Built low and sturdy, the plow will work under trees without injury to branches or fruit. No projections of any kind above the beams.

The new McKay pulls straight on centers with no side thrust.

It is simple in construction, has but few parts—most of which are steel—and is noted for its unusual strength and endurance. There are no chains, sprockets, levers or gears. The patented power lift is sure and simple.

Attached subsoilers behind each disc break up the hard pan, but may be adjusted out of the way when desired. Greater clearance above and between discs permits turning of heavy cover crops. Full Timken bearings in all wheels and discs. Pivotal front truck allows tractor and plow to turn on narrowest headlands without straining beams.

**TOWERS & SULLIVAN MFG. CO.
ROME, GEORGIA**

Distributors for the Pacific Coast

R. M. Wade Co.
Portland, Oregon

H. V. Carter Motor Co.
San Francisco, Cal.

Arnott & Co.
Los Angeles, Cal.

Full descriptive circular and additional information sent upon request. Write to the distributor nearest you.

BETTER FRUIT

Published Monthly
byBetter Fruit Publishing Company
Twelfth and Jefferson Streets
PORTLAND, OREGONW. H. WALTON.....Editor
JERROLD OWEN.....Associate Editor
C. I. MOODY.....Advertising ManagerEASTERN REPRESENTATIVES
PAUL W. & GUY F. MINNICK.....303 Fifth Ave., New York
JNO. D. ROSS.....608 Otis Bldg., Chicago
SAN FRANCISCO REPRESENTATIVE
EDWIN C. WILLIAMS.....Hobart Bldg., San FranciscoSTATE ASSOCIATE EDITORS
OREGON—C. I. Lewis, Horticulturist.
WASHINGTON—Dr. A. L. Melander, Entomologist; O. M. Morris, Horticulturist, Pullman.
COLORADO—C. P. Gillette, Director and Entomologist; E. B. House, Irrigation Expert, State Agricultural College, Fort Collins.
ARIZONA—F. J. Crider, Horticulturist, Tucson.
MONTANA—H. Thornber, Victor.
CALIFORNIA—C. W. Woodworth, Entomologist, Berkeley; W. H. Volk, Entomologist, Watsonville; Leon D. Batchelor, Horticulturist, Riverside.
INDIANA—H. S. Jackson, Pathologist, Lafayette.All Communications should be addressed and
Remittances made payable to
BETTER FRUIT PUBLISHING COMPANY
Subscription Price:
In the United States, \$1.00 per year in advance.
Canada and Foreign, including postage, \$2.00,
payable in American exchange.
Advertising Rates on Application.

Profiteering Traced

Early in October a party of Chicago aldermen visited cities of the Pacific Coast, on trail of the elusive profiteer.

No, the Windy City investigators came not here expecting to shake an accusing finger at any suspected group of Western citizens. Their suspicions pointed in an entirely different direction. They came fully expecting their investigation to fix the guilt of profiteering in market produce upon other parties. It did.

The 28 visitors were members of Chicago's committee on high costs and high rentals. For months they have been waging an active campaign for reduction in food costs and rentals. In their fight for lower food costs they of necessity had made a study of marketing practices. They had analyzed costs at the consumer end of the line. They came to Washington, Oregon and California to round out their study by getting the producer angle, more particularly in the fruit industry.

What these men learned from their investigation out here served only to confirm facts and convictions they already held. Promptly

and frankly they declared that the fruit growers are not profiteering. Russell J. Poole, able and aggressive secretary of the commission, publicly stated that the growers are in no way to blame for the high cost of their fruits in Chicago.

The railroads may be getting a bit more than entitled to for hauling the fruit East, Mr. Poole opined, but the real charge of profiteering he fastened upon the brokers and commission men. It is not an uncommon practice for these middlemen to withhold fruit from sale that prices may be pushed up. Sometimes it is held until it rots. Again, it is no uncommon occurrence, he said, for a car of Hood River or Wenatchee apples to be sold and resold five and six times during its journey to Chicago.

By these findings the stigma of profiteering, at least of unduly forcing up costs, seems rather definitely placed. Some Chicagoans pay the extra cost, others do without the fruit. In both instances the guiltless Pacific Coast growers suffer injury. In spirit and in hope for a change in the system, these growers back Chicago in her fight for lower costs through more direct distribution.

Car Shortage

Again this season, as has universally been the case when heavy fruit crops have been grown, shippers of the Pacific Coast section have been confronted at the height of the shipping movement by an apparent inability on the part of the railroads to supply sufficient cars.

For months the railroads had been begging for tonnage. Business was so slack most of them were not making expenses. Such was their plight it had the dear public on the verge of shedding tears of sympathy.

A few weeks pass and some of these same railroads are declining business on the ground that they are unable to handle it. The old excuses are revived—not enough refrigerator cars, too many required to move the grapes of California, or the cabbages of Michigan, or the potatoes of Texas.

In the past there hasn't been very much the unfortunate shippers could do in this situation. There isn't a great deal more they can do now, but one helpful course presents itself. They can throw as much as possible of their tonnage to the competing water lines. Some steamship companies have become energetic enough to fit many of their boats with refrigerator space. More of them will gladly do so if the requisite cargo is made available. Fruit shippers will do well to encourage them.

One thing more will go far toward putting the steamship companies in position to take a larger share of the Coast's fruit shipments—free tolls for coastwise shipping through the Panama canal. It would be interesting to know how many men of the western fruit industry have written or telegraphed their representatives in Congress asking them to work for the free toll measure.

Benefits of Displays

Who in your community won the prizes for best horticultural displays at the fairs of your section—yourself or your neighbor? It is a bit late to contemplate the fact that you may have made no showing of your fruits, or may not have done them justice in scope or attractiveness of displays. If such reflections are yours, perk up—there is still opportunity to gain credit for yourself and your community by entering exhibits at the big Northwest Fruit Exposition at Seattle and the Land Products Show at Portland.

In thinking of such exhibits do not forget the variety of benefits that accrue. If you do creditably there is a direct reflex benefit for your community. There comes a stimulating encouragement for your own advancement in the fruit growing industry. You will have done something to help give favorable impressions to visitors from other states and sections of our country. Neither least nor last in the category, you will have done something to stimulate the fruit-consuming appetites of the general

Experience Letter Prizes

WE WISH every fruit grower who reads this would take note of the fact that the January number of *Better Fruit* is to be a big comprehensive "Homeseekers' Number." It is to be of such nature as to make a definite and effective appeal to the thousands of persons in the Middle West and East susceptible to the lure of the fruit growing sections of the Pacific Coast.

No one thing gives the Easterner more exact information and makes more cogent appeal to him than the plain, unvarnished story of what the individual fruit grower has experienced and accomplished here. That the "Homeseekers' Number" may carry an extensive array of such articles, straight from the growers themselves, we are offering prizes for acceptable "experience letters."

For the most interesting and informative letter *Better Fruit* will give the writer \$10 in cash. For the next best letter, \$5 in cash will reward the writer. Prizes consisting of two-year and one-year subscriptions will reward others whose letters are used in this number. Subscriptions will be credited as renewals or sent to any new address, as the winner may request.

Sit down and write us in your own way of your experiences in growing fruits, berries or nuts of any sort. Tell what you have accomplished in this line whether on a city lot or 100-acre ranch. Besides the possibility of receiving a cash prize you will be doing your bit toward influencing new settlers to come to the Pacific Coast states.

Old friends back East would enjoy reading your letter among the contents of this number. Send it in promptly and if it is among those printed you will be mailed two to five extra copies—just to show our appreciation.

FREDERICK PAGE, prominent New York city builder, has purchased ten acres of bearing orchard in the Belmont district at Hood River and has moved his family there. Previously he had an orchard at Mosier, Oregon. He sold this before making the purchase near Hood River.

LEWISTON VALLEY WATER CO.
Lewiston Orchards

Lewiston, Idaho
June 21, 1921

Better Fruit Publishing Co.
Portland, Oregon
Gentlemen:

I have before me the June copy of *Better Fruit*. I wish that every fruit grower in the Northwest could read this issue.

You will find inclosed a list of the fruit growers on the Lewiston Orchards. I hope you will be able to mail each one a copy of the June number. This one issue is worth many dollars to any fruit grower.

Yours truly,
(Signed) David S. Wallace, Manager



Give Your Orchards a Tonic!

FRUIT TREES, like persons, cannot grow without nourishing food. Their food area is limited by root extension. When the soil is sapped of its nourishment, the trees starve to death.

By Blasting the Soil with



DYNAMITE

the soil is deeply pulverized and aerated and greater root extension is ensured. Moisture is easily absorbed and retained for periods of drought.

Old Orchards can be rejuvenated by firing small charges of Du Pont Dynamite in the soil below the tips of the branches. This blasting operation is the tonic required to restore old trees to a productive and profitable condition. New trees planted in dynamited ground develop better root systems, grow faster and yield more and better fruit.

Du Pont Dynamite was the first explosive made for tree-planting, land-clearing and ditching. Always uniform in its results, it is the most efficient and economical powder to use. Get it from your hardware dealer or general store.

Write for a free copy of Farmers' Handbook of Explosives telling how to rejuvenate orchards, blast tree-holes and clear and drain land.

E. I. du Pont de Nemours & Co., Inc.

PORLAND

SEATTLE

SPOKANE

Musical
Merchandise

—
Write
Us

WE SAVE YOU MONEY!

W. Martius Music House, Inc.

1009 First Avenue, Seattle, Washington
Everything Known in Music

SHEET
MUSIC

—
Write
Us

Are You Reading the Advertisements?

If you are not you should be for there are many new devices coming into the market all the time, some of which may help you solve your biggest problems.

Need of Commercial Fertilizers in Bitter Root Valley

By EDMUND BURKE

Chemist, Bozeman Agricultural Experiment Station

THE first soil investigations made by the Montana Experiment Station were in 1897 when the origin and extent of alkali salts were studied. The first work done in the Bitter Root valley was in 1899 and confined entirely to the bottom land where alkali salts would be liable to be found in the largest quantities.

At the time this investigation was started, only the most fertile land in the state was under cultivation and with the exception of excessive amounts of alkali in a few localities, all lands were producing such large yields of grains and grasses that no one even dreamed of our soils being lacking in any of the elements essential to plant growth.

With the advent of dry farming and the rapid settlement of our government lands, a considerable portion of our grazing lands was settled and put under cultivation, some as dry land and, in some cases, irrigation projects were developed and the lands irrigated, but even up to this time, the farmer, and even the scientist, were prone to believe that any of this newly acquired land was lacking in plant foods and continued to hold to the idea that all Montana soils were unusually rich in all of the elements essential to plant life and would produce bumper crops under proper methods of cropping and tilling when well supplied with moisture.

About 1910 and 1911, soon after the rapid extension of our farming land, the soil work of the experiment station was extended to include a study of the nitrogen, phosphorus and lime content of the soils. It soon became evident that some of our soils were lacking in nitrogen, the plant food element most closely associated with organic matter. The scarcity of nitrogen is not confined to any particular locality in Montana, neither is it confined to this state for the same condition prevails in many sections of the semi-arid region of the West. Aside from differences in soil types, rainfall is the controlling factor in the accumulation of nitrogen in the soil. Where the rainfall is light, there will be a light growth of vegetation and consequently a slow accumulation of nitrogen. In humid countries, there is a danger of the nitrogen being leached from the soil. This loss, however, seldom equals in amount that which fails to form in semi-arid countries.

Phosphorus is not of organic origin and therefore the per cent present in a virgin soil is not influenced by precipitation like nitrogen. Some soils contain much more phosphorus than others, but it must be borne in mind that that condition is brought about largely by geological activities. Near Philipsburg there is phosphate rock analyzing 10 per cent phosphorus, while some of our soils in the state will not analyze more than

0.02 per cent. The lime in a soil is slowly leached to greater depths by rain water and irrigation and where other conditions are equal, there is more lime in regions of light rainfall than in humid countries.

So much for the pioneer work of the station and the factors which influence plant foods of the soil. This discussion may

seem somewhat technical, but I believe the time is coming, if not already here, when we must devote more time to a study of the plant food in a soil and the feeding habits of plants. The farmer is careful to balance his horses' rations so that they are able to do a maximum amount of work or his cows' rations so that they will give a maximum



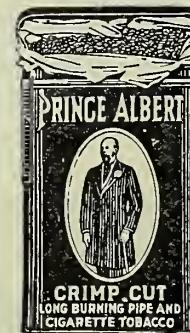
You'll get somewhere with a pipe and P. A.!

Start fresh all over again at the beginning! Get a pipe!—and forget every smoke experience you ever had that spilled the beans! For a jimmy pipe, packed brimful with Prince Albert, will trim any degree of smokejoy you ever registered! It's a revelation!

Put a pin in here! Prince Albert can't bite your tongue or parch your throat. Both are cut out by our exclusive patented process. So, just pass up any old idea you may have stored away that you can't smoke a pipe! You can if it's P. A. for packing!

What P. A. hands you in a pipe it will duplicate in a home-made cigarette! P. A.'s a cinch to roll because it's crimp cut and stays put!

Prince Albert is sold in toppy red bags, tidy red tins, handsome pound and half pound tin humidors and in the pound crystal glass humidor with sponge moistener top.



Copyright 1921 by
R. J. Reynolds
Tobacco Co.
Winston-Salem, N. C.

PRINCE ALBERT

the national joy smoke

milk flow. Every farmer knows the general methods of feeding stock. He also knows that well fed and well groomed animals are more resistant to diseases and the attacks less fatal to them than to animals suffering from malnutrition or starvation.

WITH animals, the farmer can see the quality and quantity of food that they are consuming and note its effects. This makes the problem of feeding stock more simple than the problem of feeding plants. The plant, be it grass, grain or tree, requires a balanced ration in order to obtain its maximum growth and its resistance to disease just the same as stock and not until the farmer learns to feed his plants will he get the greatest returns for the money expended. In feeding plants, we are dealing with elements existing in the soil in small quantities and invisible to the eye. It is therefore impossible for the farmer to tell if the plant is receiving its proper ration except by its appearance and rate of growth.

A plant, properly fed, will make a normal growth, its leaves will be of normal size, of a good green color and its power to reproduce seed or fruit will be at a maximum. The feeding habits of different species of plants differ the same as different species of animals. One species may require more lime, nitrogen, phosphorus or potash than some other species just the same as a hog requires a greater proportion of grain to roughage than a sheep, horse or cow. Water is as important for growing plants as for animals and where irrigation is possible, no plant should be allowed to suffer for water. Where irrigation is not possible, the greatest care should be exercised to conserve that which comes as rain or snow, so that the plant will receive the most possible.

While different species of plants may differ in their feeding habits, it must be remembered that the functions of the plant foods do not differ in different species. For example, nitrogen's chief purpose in all species of plant is in leaf formation and the production of proteins and nitrogenous bodies, potash in building up the carbohydrates and cell structure and phosphates in producing seed and fruit. In discussing plant foods, it must be remembered that



Growers' and Packers' Equipment

We Manufacture:

LADDERS	and
BOX PRESSES	all
PACKING CHAIRS	kinds
BOX-MAKING BENCHES	of
AUTOMATIC ELEVATORS	Special
GRAVITY & POWER CONVEYOR	Equipment
POTATO GRADERS AND SIZERS	
PRICE FRUIT SORTERS AND SIZERS	
NELSON FRUIT SORTERS AND SIZERS	

PRICE "PRICE PRODUCTS"

Before You Buy Others

We maintain a consulting department which will be very glad to advise with you in planning the installation of equipment for your packing house or warehouse.

Illustrated Booklets and Price List on Request

Fruit Appliance Company

Successors to

Price Manufacturing Company, Inc.

YAKIMA, WASHINGTON

SIMONS, SHUTTLEWORTH & CO., Liverpool and Manchester

SIMONS & CO., LTD., Glasgow

GARCIA, JACOBS & CO., London

SIMONS (Southampton) LIMITED, Southampton

Agencies and Representatives in Every Important European Market

European Receivers of American Fruits

For Market Information Address

SIMONS, SHUTTLEWORTH & FRENCH CO.
204 Franklin Street, New York

SIMONS FRUIT CO.
Toronto and Montreal

SIMONS, SHUTTLEWORTH, WEBLING CO.
12 South Market Street, Boston

OUR SPECIALTIES ARE APPLES AND PEARS

there are several others than those mentioned and probably just as essential, but the soil, in general, is well supplied with them so we will interest ourselves only with those that are liable to be lacking.

The analysis of soil in the Bitter Root valley shows a wide range in the per cent of plant foods present, so much so, that one orchardist living on the east side of the river would not be justified in applying lime to his soil because some neighbor of his on the west side had been benfited by its use. Neither would an orchardist living on either side of the river be entirely justified in increasing the nitrogen and phosphorus content of his soil simply because his neighbor's orchard had been benfited by the application of these fertilizers.

THE chances are, however, that if one orchard is benfited by a certain treatment that some other orchards in the same vicinity should be benfited by a like treatment and is worthy of trial. The experiment should not, however, involve any considerable expense, but rather carried on a small scale until definite results are obtained. The logical thing for all orchardists is to determine by chemical analysis and fertilizer experiments the feeding power of their soils. The experiment station will gladly co-operate with the fruit growers by analyzing their soils and advise the proper fertilizer to use. From this point on the orchardist, by the aid of the county agents, should be able to apply the remedies recommended by the station and note the results obtained.

Mention has already been made of a lack of nitrogen, phosphorus or lime in some of our Montana soils. The Bitter Root valley, while blessed with a delightful climate and some of the most fertile soil in the state, is no exception, for here we find some soil, the fertility of which can be greatly improved by the application of fertilizers. The fertilizer most needed is nitrogen and fortunately, this can be supplied by growing leguminous crops and plowing them under. The one danger encountered by this method is the attempt to grow two crops on land that can ill afford to produce one and as the legumes are harder nitrogen feeders than fruit trees, no beneficial results can be looked for until one or more crops have been plowed under and the organic matter humified.

It might be well in the case of bearing fruit trees to use some nitrogenous fertilizer when growing the first and even the second crop of legumes and especially so if growing clover or alfalfa. When peas are to be used to increase the nitrogen in the soil, they can be sowed late in the spring so that the trees can do most of their feeding before the peas begin to take up much plant food from the soil. Barnyard manure is also a means of supplying nitrogen and should be applied to orchards when possible.

There are a few locations in the Bitter Root valley where the soils should be im-

proved by the application of lime. The only way to supply this element is by adding ground limestone upon the degree of acidity of the soil. Unfortunately, there is no chemical means of determining the exact degree of acidity of a soil or the exact amount of lime to add to obtain maximum results. When a soil is known to be acid, it is always best to determine the amount to add by experimenting with varying amounts to see which gives the best results.

Phosphorus, another element which is possibly lacking in some of the soils of the Bitter Root valley, may be added in the form of ground phosphate rock or the superphosphate. Where quick results are desirable, it is readily taken up by the trees or plant.

The phosphorus in the ground phosphate

rock is slightly soluble and its availability is therefore brought about largely through bacterial action in the soil. This form should prove most beneficial to young orchards where the growth of the trees alone is to be considered. Bearing trees, suffering from the lack of phosphorus, should have the phosphorus added in a form more readily available. For experimental purposes, the superphosphate should be added at the rate of from 400 to 800 pounds per acre.

In conclusion, permit me to say that some, probably not all of the orchardists of the Bitter Root valley, will have to use more care in maintaining the fertility of their soils, that the use of fertilizers must be encouraged and that the general trend should be a building up of soil fertility rather than a rapid depletion like that practiced at one time by clean cultivation.

MYERS SPRAY PUMPS

FOR SPRAYING, PAINTING, WHITEWASHING AND DISINFECTING.

CATALOG FREE ON REQUEST

THE F.E. MYERS & BRO. CO.

135 ORANGE ST. ASHLAND, OHIO.

MANUFACTURERS OF PUMPS FOR EVERY PURPOSE
HAY UNLOADING TOOLS AND DOOR HANGERS

YERS
PUMPS FOR EVERY PURPOSE
HAY TOOLS & DOOR HANGERS

Pacific Northwest
Distributors

Mitchell
LEWIS & STAYER CO.
Spokane, Wash.
Portland, Oregon

BUY FROM THE LOCAL MITCHELL DEALER

Marketing News of Interest

APPLE shipments in the United States have in recent days been amounting from 1100 to about 1500 carloads daily, according to reports of the United States Bureau of Markets. For instance, on October 17 the total was given as 1484 cars; on October 18, as 1222 cars, and on October 19, as 1132 cars. Up to October 18 the grand total for the United States, according to report of the Spokane branch of the bureau, had reached 35,088 carloads, as compared with 35,381 carloads by the same date in 1921.

Typical of the way apples have been moving of late in Northwestern states are these figures of the bureau on daily carlot shipments: October 18—California, 35; Idaho, 129; Montana, 10; Oregon, 54; Washington, 515. October 19—California, 47; Idaho, 81; Montana, 23; Oregon, 101; Washington, 389.

SLOWING down of the apple market was reported from many points the third week in October. Because of heavy movements, in part due to possibility of a tieup of the railroads in the threatened strike and in part due to desire of the growers to realize on their crops as quickly as possible, a continuation of rather heavy markets into this month is probable.

The Spokane bureau report of October 18 was this: Carloads f. o. b. usual terms. Few sales reported. Wenatchee valley, no sales reported except on rollers. Yakima valley Jonathans, 10 per cent 5 tr., XF, \$1.90; fancy, \$1.65; Winesaps, XF small, \$1.65; Romes, XF large, \$1.85 to \$2. Other districts, too few sales reported to quote.

CALIFORNIA apple growers are not experiencing anything like a satisfactory deal, but this situation will be temporary, in the opinion of San Francisco dealers, who expect conditions to show marked improvement in the near future.

The movement of California apples is extremely slow. Light demand is indicated by the rapidity with which stocks are piling up in the ice houses. Holdings in storage in San Francisco increased almost 34,000 boxes during the second week of October. Current holdings are far in excess of those reported at this time last year, amounting to 117,943 boxes, as compared with but 19,087.

The first straight carloads of new crop Spitzberg apples of the season were received in San Francisco from the Hood River district of Oregon October 14 and sales were reported at \$2.50 to \$2.75 per box.

HEAVY shipments of apples have been made from Oregon the past three weeks to canneries and cider manufacturers of the Mid-West and further liberal movement of apples falling below the "C" grade are expected. Average prices quoted f. o. b. Columbia river points have been \$12 for those falling below the "C" grade, while strictly cider apples, including poorest stock available, have been bringing \$6. Reports are to the effect that buyers of the better grade of culls have been selecting the best from their lots, boxing them and selling them to large retailers at 80 cents to \$1 a box.

FRANK HARKNESS of Spokane is authority for the statement that European and foreign markets are this year taking twice the amount of apples sent them last season. Refrigerator space on out-bound boats has been easy to get, he said, but shipments were interfered with by inability to obtain cars in which to transport the apples to port. He said that first reports received were to the effect that the fruit is reaching the European markets in excellent condition.

IN an effort to fill early orders for prunes as soon as possible, the Oregon Growers' Cooperative Association reported October 15 that it was packing in all of the prune growing districts. The plants at Salem, Dallas, Riddle, Myrtle Creek, Yamhill and Creswell were working at top speed in an effort to get out 15 carloads during the week. First shipments had already gone forward. They embraced 12 cars, eight of which were for export to Canada and England.

THE California Prune and Apricot Association, which controls 87 per cent of the California prune crop, early reported that it had sold out of its crop all 20's, 30's, 90's and 120's. The remainder of the association's crop is listed as follows: 27 per cent 40's, 20 per cent 50's and 60's, 10 per cent 70's and 5 per cent 80's.

EIGHTEEN cars of British Columbia apples were shipped about October 10 from Vancouver to Australia as the first of such shipments for the season. The apples were 80 per cent Jonathans and the remainder McIntosh Reds.

CRANBERRIES from the bogs of Washington and Oregon moved unusually early in carload lots this season. The Pacific Cranberry Exchange shipped carload lots from Washington to points in that state and California as early as the middle of October.

ANNOUNCEMENT has been made at Yakima that the Northern Pacific railroad will continue its reduced rates on apples after December 31. The rate of \$1.50 on Western apples to Eastern terminals would thus remain in effect. When the rate was first announced it was to be effective only until the end of the year.

GOVERNMENT reports showed that fruit worm damage in September reduced the Massachusetts cranberry crop to 175,000 barrels, as compared with 280,000 last year. Other government estimates on this crop were: New Jersey, 190,000 barrels; Wisconsin, 23,100 barrels; Washington, 20,160 bushels; Oregon, 8,032 bushels.

TORO BRAND AGRICULTURAL SULPHUR

Improves alkali soil, transforms potash and phosphorous into plant food. Prevents wire worms, smutty grain and potato scab. 220 lbs. per acre has increased crops up to 600 per cent.

Write for circulars 6, 7 and 8, price list and samples.

DIAMOND "S" BRAND for Lime-Sulphur Solution. ANCHOR BRAND for dry dusting. CARBON BISULPHIDE for rodent control.

SAN FRANCISCO SULPHUR CO.
624 California Street
San Francisco, California

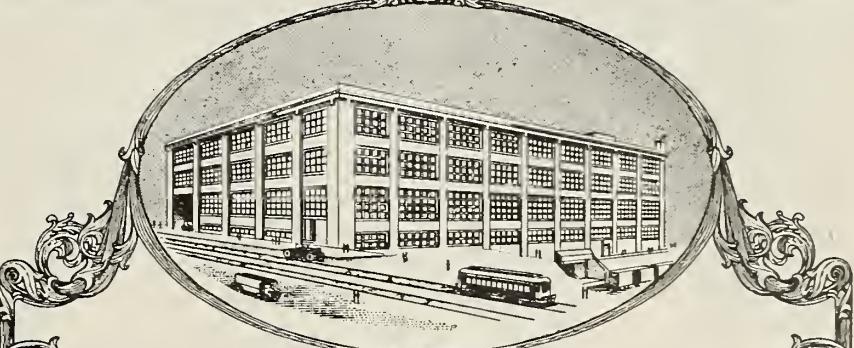
Apples, Pears, Peaches Potatoes, Onions

and all kinds of Fruit and Produce Bought for Cash..

Address us as to what you have to offer.

WILLEY FRUIT CO., Inc.

215-217 Washington St. Portland, Ore.



F.C. Stettler Mfg Co.
Portland — Oregon

Lithographers
Color Printers
Labels
Cartons
Folding Boxes
Cut Outs
Display Cards
Special Advertising
Stiff Boxes Plain and Fancy

Land Show Premiums

OFFICIALS of the Land Products Show, to be held in connection with the Pacific International Exposition in Portland, November 5 to 12, have arranged an attractive list of premiums on apples and pears that should attract many displays by growers of the Northwest. It is announced that all exhibits winning first prizes are to become the property of the Land Products Show management.

These premiums on apples are announced:

Twenty-five box display, commercial pack, one or more varieties: First \$150, second \$75.

Five-box display, commercial pack, one or more varieties: First \$50, second \$25.

One-box display, Newtowns, Spitzbergs, Winter Banana, Rome Beauty, Winesap, Grimes Golden, Delicious, Arkansas Black, Ortley and Jonathan: First prize,

\$10 each variety; second prize, \$5 each variety.

On pears the premiums are these:

Best display, five one-half boxes, commercial pack, all varieties: First \$35, second \$15.

Loganberry growers should put the canes upon the trellises before the winter rainy season if tip dieback is to be prevented. Although a very severe winter might injure the canes to some extent, investigations conducted this year by the

Oregon Agricultural College Experiment Station show that the yearly loss due to dieback exceeds in importance the possibility of another exceptional winter. As soon as tied up they should be sprayed with Bordeaux 4-4-50 to protect against fungi, especially the bases of the canes.

ANNOUNCEMENT is made by the State College of Washington, at Pullman, that a strong course in the marketing of farm products will be given as a feature of its short course in agriculture, January 2 to February 24.

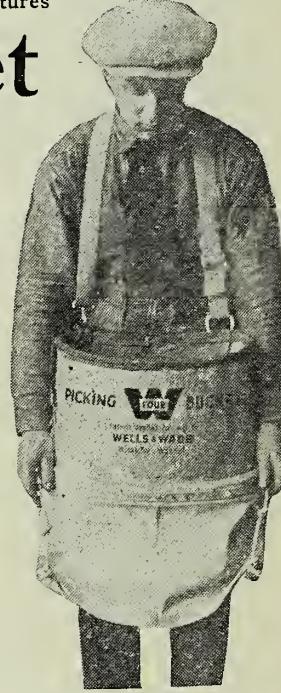
RELIABLE NURSERY PRODUCTS

Large assortment of the best varieties in Fruit and Nut Trees. Small Fruits, Shade and Ornamental Trees, Shrubbery, Roses, Vines, Perennial Plants and Bulbs. Fully equipped Landscape Department. Planting plans furnished for residence grounds, large estates, Parks, Cemeteries, etc., also Tree Surgery done. All stock and work the best. Write today stating your needs.

OREGON NURSERY COMPANY, Orenco, Ore.
Opportunities for More Salesmen



No Stem Punctures



The "4 W" Picking Bucket

PATENT APPLIED FOR

A heavy galvanized-iron picking bucket with bottom of strong canvas, reinforced at wearing points with chrome leather. Bucket is shaped to fit close to the body. Suspender-style harness distributes load equally on both shoulders and back. Top edge of bucket lower in front by one inch; and is padded with felt, covered with twill webbing sewed to bucket with soft brass wire. Felt pad at back stops bruising in picking operation. Canvas bottoms are fastened to bucket by patented ring which permits instant removal if ever necessary. Hundreds of these buckets will go through two full seasons without changing the original canvas. New bottoms are always available and inexpensive. Fruit is dumped from bucket through canvas bottom—both hands of picker guiding placement and assuring no damage to the finest fruit.

Every "4 W" Picking Bucket Sold During the 1921

Season Paid for Itself many Times Over by Eliminating Loss from Bruised and Stem-punctured Apples

Earned \$25 to \$50 Each

Wenatchee, Wash., Oct. 22, 1921

WELLS & WADE,
Wenatchee, Washington.

Gentlemen:

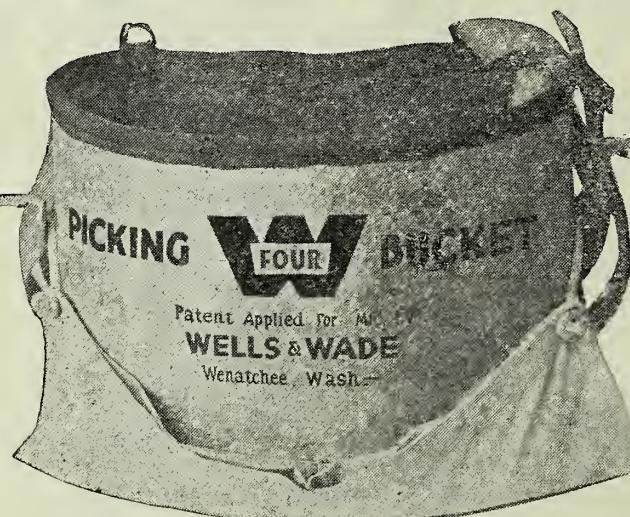
During the 1921 fruit season we purchased and used approximately two hundred fifty of your "4W" Picking Buckets. The bucket has proven a big success in our orchards, practically eliminating stem punctures from our fruit. It would be very hard to induce this organization to go back to the old system of picking with canvas bags.

It is impossible to estimate the saving made by the use of the Wells & Wade Bucket—but I am confident that in our orchards we have been able to market several thousand more boxes of apples because of having used the buckets, than we would have marketed if we had used canvas picking bags.

Very truly yours,

AMERICAN FRUIT
GROWERS, INC.

(Signed) By Earl Barnhill,
Regional Supervisor.



PRICE, \$4.50

SEND FOR SAMPLE BUCKET—NOW!—PLACE ORDERS EARLY

"Better Than Bags"

Peshastin, Wash., Oct. 21, 1921.

WELLS & WADE,
Wenatchee, Washington.

Gentlemen:

There were 40,000 boxes of apples picked in "4W" Picking Buckets on this tract this season—and I can say that this bucket has given entire satisfaction. Growers who have used the "bags" in years past have found that at least 15 per cent of the fruit picked in bags have been "culls," from bruises and stem punctures. This is a HEAVY LOSS to any grower. After using the "4W" Picking Bucket a full season, I can safely say that I have not had 1 per cent loss in bruised or stem-punctured apples—and this applies equally well to all varieties of tree fruit. Furthermore, I have not had a single apple-picker want to change one of these buckets for a bag.

Yours very truly,

(Signed) CHARLES LINVILLE,
Manager Peshastin Orchard,
Peshastin, Washington.

Stop making CULLS
out of your Extra
Fancy Fruit

WELLS & WADE

Manufacturers and Distributors
WENATCHEE, WASHINGTON

Insure Delivery Next
Year by PLACING
ORDERS NOW!

WASHINGTON

DURING the height of the packing season in the Wenatchee district apples have been rolling out at the rate of from 150 to 200 cars a day. The shippers hope to maintain shipments at the rate of 200 cars daily during the first half of November. Even then, it is estimated, there will remain about 8000 cars to be stored; with capacity for only 4000 cars. Consignments by water for Atlantic and European points, forwarded via Seattle, may aid in cutting down the surplus.

▲▲▲

THE Valley Fruit company has leased the Luther dehydrating plant at Walla Walla, idle for two years, and will handle cull apples. Manager Frank Shields stated the company was actuated by two things—to make a market for growers' culls and to furnish work for the unemployed. The plant will handle ten tons of green fruit a day. The company is working 185 persons at its packing plant in Walla Walla and 35 in its warehouse on the state line. Its payroll is now \$10,000 a month.

▲▲▲

BY-PRODUCTS plants in the vicinity of Yakima are reported as running night and day to take care of cull apples which have piled up in warehouses of the dehydrators and canneries. There are seven such plants at Yakima. In running at capacity this season they will use 15,000 tons of culls and give employment to 800 men and women over a period of four to six months. The price of culls opened at \$10, as announced by the Libby, McNeill & Libby cannery, but later dropped to \$8. At that, several of the plants have refused offerings because unable to handle them.

▲▲▲

A RECORD price for apple land for the Okanogan Valley, and probably for all of north central Washington, was said to have been established when Dr. H. B. Clough sold his orchard of 19.2 acres to Oscar C. Erickson for \$35,000, a price of \$1876 an acre. The trees are mostly Johnathans, Winesaps, Stayman and Delicious. Erickson held a four-year lease on the orchard and is reported to

have received \$12,000 for this year's crop, conservatively estimated at more than 6000 boxes.

▲▲▲

COMPLAINT was made at Spokane that unemployed men refused 30 cents an hour for apple picking in the Spokane valley when the jobs were listed at the city free employment bureau.

▲▲▲

THE harvest festival held in Washougal, October 10, was attended by the Prunarians of Vancouver and members of the Washington Growers' Packing corporation.

▲▲▲

IN THE orchard of Mrs. Lucy J. Isaac, at Okanogan, Wash., the first of October, thieves stole more than 250 boxes of Winter Banana apples. The fruit was picked, hauled away, property replaced under the trees and the orchard gone over with a spring-tooth harrow to obliterate the tracks.

▲▲▲

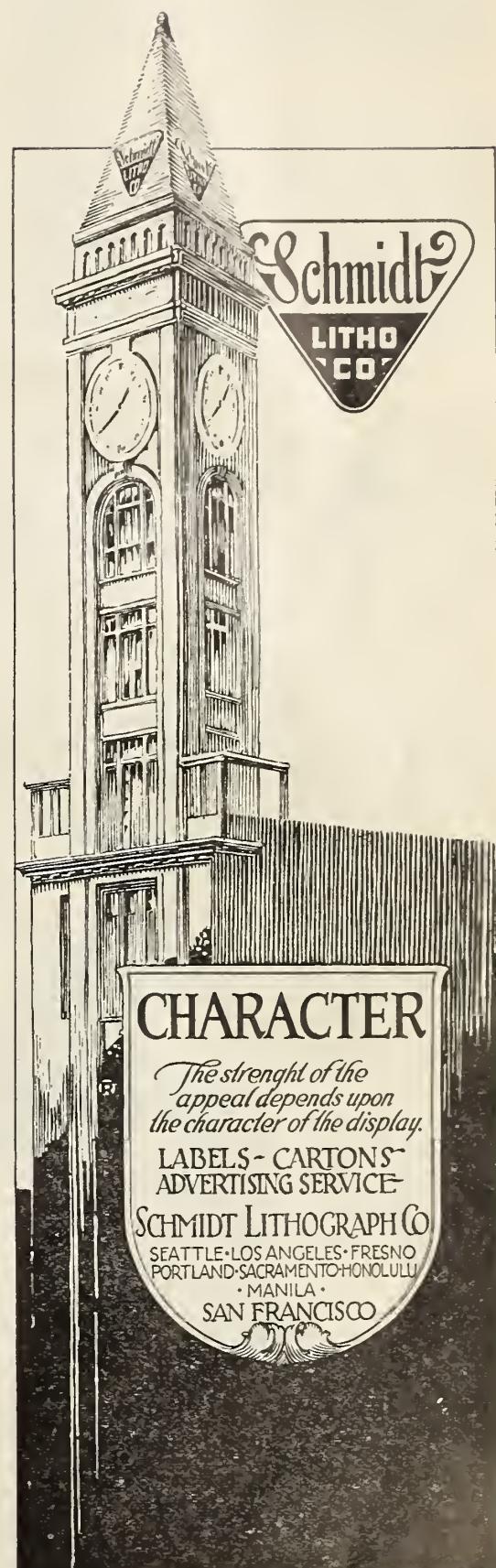
A RECORD has been made by the prune orchard of B. O. Case, in the Fruit Valley district, south of Ridgefield, Wash. This five-acre orchard comprises 565 trees, which produced 16 1/3 tons of dried fruit, or 32,667 pounds of prunes. This is an average of about 58 pounds of dried fruit to the tree. The prunes were unusually large, the major portion being 30-40s. Trees in the Case orchard are planted 18 feet apart, which is much closer than the average orchard is set.

▲▲▲

TWENTY-FIVE girls, expert apple pickers and packers, were brought to the Spokane district by the Palouse corporation, to handle the 150,000 boxes of apples from the corporation's orchards. It was estimated that the girls would average net earnings ranging from \$150 to \$200.

▲▲▲

THE Cherry Hill ranch at Sunnyside, owned by F. K. Spaulding & Son, during the 1921 season produced on 12 acres a record fruit crop. The owners are said to have marketed 45,000 pounds of cherries, 70,000 pounds of pears, 10,000 pounds of plums, 3000 pounds of prunes, 42,000 pounds of peaches and 40,000 pounds of apples.



A new product for the Orchardist



Prepared Casein Spreader
as pronounced superior by Experts
after complete tests & Efficient
& Economical & Ask your dealer
or write to us for circular

CALIFORNIA CENTRAL CREAMERIES

425 BATTERY STREET
SAN FRANCISCO740 TERMINAL STREET
LOS ANGELES

TREES AND SHRUBS



Fruit trees budded from bearing orchards. Apple, Pear, Cherry, Peach, Plum, Frune, Apricot, Quince, Grape Vines, Shrubbery, Plants, Raspberries, Blackberries, Logans, Dewberries, Asparagus, Rhubarb, Flowering Shrubs, Roses, Vines, Hedge, Nut and Shade Trees. Carriage paid. Satisfaction guaranteed.

WASHINGTON NURSERY CO.

Toppenish, Washington. Salesmen everywhere. More wanted.

APPLE growers in the Spokane Valley report considerable damage done to the crop by the heavy winds of the last week in September. Special damage was done to the Rome Beauty crop. Reports secured by H. M. Dexter, traffic manager of the Spokane Fruit Growers' Company placed the crop damage at from 20 to 30 per cent. Wagners escaped with the slightest damage, it was stated, two-thirds of that variety having been harvested.

▲▲▲

ON completion of the prune harvest of Clarke county the yield was placed at about 2,000,000 pounds, the crop being much lighter than that of last year. In spite of this, it is said the growers are realizing much more on this year's crop, as prices are higher and labor costs have been considerably less than last season. It is estimated that the labor costs were cut nearly 50 per cent. Part of this year's crop will sell for 18 cents per pound, or a premium of 6 cents because of the large size of the prunes.

OREGON

UNDER sponsorship of the Medford Chamber of Commerce an excellent apple show, officially known as the Rogue River Valley Apple Exposition, was staged in that city the last of October, opening to the public October 29. The judging was done the day before. An attractive premium list, including both cash and merchandise awards, was arranged by the committee in charge.

▲▲▲

ONE of the largest prune orchards of the state is that of Dr. E. D. Scarbrough, Cresswell, Lane county, containing 147 acres of trees. Twenty-five acres of trees are 31 years old and 122 acres are 20 years old. The yield this year was good, amounting to approximately 250 tons of dried prunes. Four dryers containing 148 tunnels were used in drying the crop and employment was given to 150 persons and six teams in handling it.

▲▲▲

THE walnut crop handled by the Oregon Growers' Co-operative Association was practically all sold by the first of last month and at prices averaging one and two cents above those being paid for California walnuts. The grafted nuts sold for 30 cents, the No. 1's for 26½ cents and the No. 2's for 18 cents.

▲▲▲

THE first Rogue River Valley apples sold in Chicago this season consisted of a straight car of choice Winter Bananas, packed and shipped by the Oregon Growers' Co-operative Association, and brought an average of \$3.40 a box at auction. The apples were the property of Lathrop Brothers.

▲▲▲

THEFTS of fruit in the Hood River Valley this season have resulted in losses to several growers. Early in October an unknown truck driver loaded and hauled away a number of boxes of fancy apples from the ranches of W. T. Price and G. K. Johnson. Deputy sheriffs were given all available clues, but failed to locate the thief.

▲▲▲

THE Radovan fruit dryer at Medford, the largest of its kind in southern Oregon, was destroyed by fire on the morning of October 9. The plant was owned by Mrs. F. M. Radovan, who said the loss amounted to \$33,500. Insurance held aggregated \$25,000.

▲▲▲

CONKLIN & DEAN is the name of the new firm formed by the merger of the business of John F. Dean and the A. G. Conklin packing and shipping houses of Cove, Oregon. The new firm is said to be a rival of the Earl J. Stackland fruit house, and the merger is said to mean much to the fruit growers of Cove Valley.

▲▲▲

ALL activities of the International Apple Shippers' Association for the Salem district will be in charge hereafter of R. C. Paulus, general

manager of the Oregon Growers' Co-operative Association, who has been appointed special vice-president of the international association. He will represent the organization in problems of transportation, storage and other operations relating to the welfare of the apple-shipping industry in the district.

▲▲▲

ROSENBERG BROTHERS, proprietors of the Bear Creek orchards, near Medford, sold a carload of D'Anjou pears on the New York market for \$4249, said to be the highest price ever paid for pears in the United States. This represents a price of \$4.25 per half box. The deal was made through the Stewart Fruit Company.

▲▲▲

TROUBLE was experienced in the Hood River apple district over getting professional apple packers to work. It was estimated that at one time at least 100 idle packers were in the district, but refused to work for less than 7 cents per box, while the growers have kept to their offer of 5 cents per box.

IDAHO

THE prune crop of southwestern Idaho was unusually heavy. Production in orchards between Boise and Weiser was reported as approximately 2,200 cars. The growers received \$50 and \$55 a ton for the green fruit.

▲▲▲

REQUIREMENTS for transporting Idaho's apple crop, estimated at 3,933,000 bushels, have been around 4,100 cars. Yields in the Boise and Payette Valleys have been better than anticipated in early estimates.

▲▲▲

AT THE height of the apple canning season the Oregon Packing company at Lewiston employed more than 175 persons. Receipts of Johnathan apples totaled 300 tons. The cannery then worked on Rome Beauties and is finishing with Winesaps and like late varieties.

▲▲▲

THE Mesa orchard at Council, one of the largest apple orchards of the state, has a yield of 200,000 boxes this year.

SERVICE
IS OUR FIRST N-AIM

PERFECT
FRUIT
LABELS

THE
SIMPSON & DOELLER
CO.
1423-24 N.W. BANK BLDG.
PORTLAND, OREGON.

**GET OUR SAMPLES
AND PRICES**

**WE CAN FILL YOUR
ORDER FOR STOCK
APPLE, PEAR, CHERRY
AND STRAWBERRY LABELS
IN 24 HOURS.**

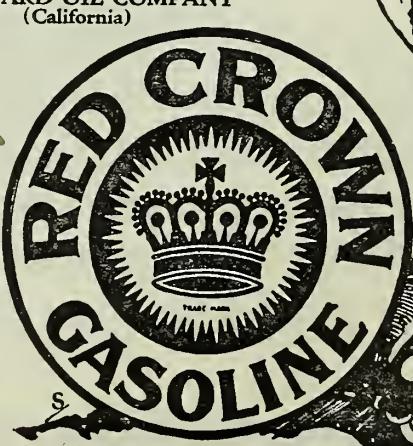
*Good roads
and good
Gasoline*

That is the combination that brings a smile to the motorist.

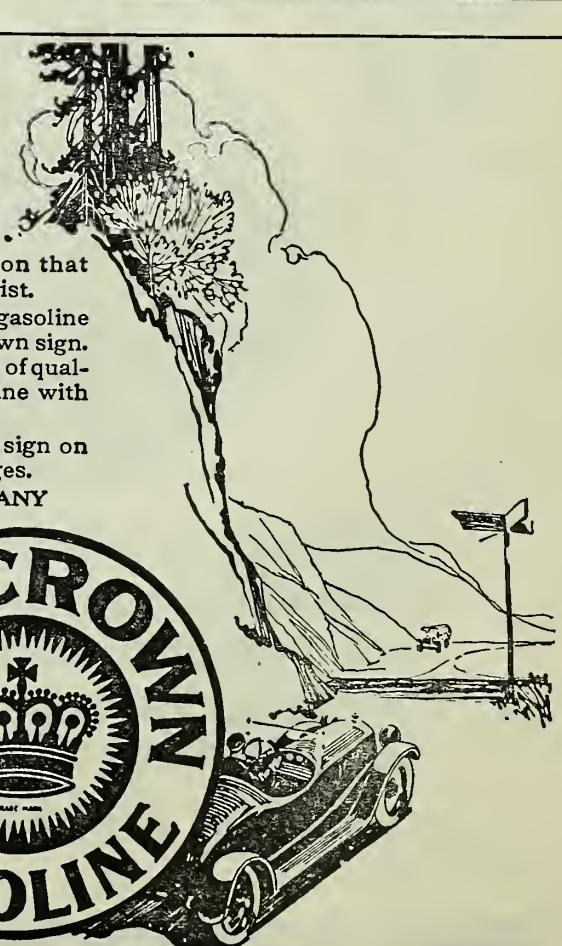
You can be sure of good gasoline where you see the Red Crown sign. Red Crown is "the gasoline of quality"—the all-refinery gasoline with power in every drop.

Look for the Red Crown sign on service stations and garages.

STANDARD OIL COMPANY
(California)



*The Gasoline
of Quality*



CALIFORNIA

LAST month a group of California pear growers and experts interested in pear culture came to study the methods of Professor F. C. Reimer and others in successfully combating pear blight in Oregon. It is highly probable that on their return they will be able to give California growers some vital pointers on the control of blight. The visiting party consisted of Horticultural Commissioner H. P. Stabler; James Mills, Hamilton City grower and shipper, and Howard Reed and H. H. Wolfskill, pear growers.

▲ ▲ ▲

CHARGE was made last month by Miss Marget Lynch, field agent of the California Industrial Welfare Commission, that apple packing establishments of the Watsonville district were violating orders of the commission in paying women packers 25 cents an hour instead of 33 1-3 cents as provided by law. The commission announced that it would send agents to the district to see that the minimum wage be put into effect, but report as to what was accomplished in this line has not been given out.

▲ ▲ ▲

C. M. BROWN of the Golden Orange Association began packing apples in the Yucaipa district near Redlands the first week in October. This was the first time apples have been packed in quantity in that district. Mr. Brown said he expected to handle 100,000 boxes of Delicious and 150,000 boxes of Johnathans, Rome Beauties and Winesaps.

▲ ▲ ▲

LATE in September the first straight carload of strawberries in the history of the industry there were sent direct to the Atlantic Coast from the Pajaro Valley. It was said these berries were the only ones on the market at the time and would have no competition in eastern markets until Florida berries show up.

▲ ▲ ▲

IN a suit involving refusal of the California Packing Corporation to accept about half of the 1920 prune crop of Milos M. Gopecevic of Lakeport the plaintiff won \$20,000 damages. The corporation accepted and paid for about half of Gopecevic's prunes, but when he delivered the remaining 54 tons declined to take them.

▲ ▲ ▲

Save and Prosper

With constant systematic saving your account should grow to be the foundation of a fortune.

You will have capital to invest advantageously when opportunity offers. You will be on the road to success.

A Savings Account may be opened with an initial deposit of one dollar.

The First National Bank

OF PORTLAND, OREGON

The first national bank west of the Rocky Mountains

CONFIDENCE in grapes continues strong in Tulare county. For the present year it was reported that 4600 acres of new vines were set out. New plantings of all vines in the county reached a new record, the aggregate being 19,542 acres, requiring 10,130,639 plants.

▲ ▲ ▲

THE fifty-fourth state fruit growers' and farmers' convention of California was held in Los Angeles October 24-28.

▲ ▲ ▲

AT a meeting held in Dinuba by 200 growers, shippers and distributors of Emperor grapes a standard high-class pack was established for the crop to be handled in kegs and a minimum price of \$4.50 per keg, f. o. b. California, was agreed upon. Arrangements were made to have state inspectors see that an A-1 quality be maintained in the pack.

▲ ▲ ▲

FANCY wine grapes have sold in the vicinity of San Francisco as high as \$135 per ton, with ordinary stock selling from \$90 to \$100 per

ton. Car shortage has checked the shipment of wine and table grapes. Dealers expect the entire raisin crop of this year and the surplus from last season to move at the raisin association's price.

▲ ▲ ▲

THE Riverside cannery of the California Peach and Fig Growers turned out this season 2,500 tons of canned peaches. The market for these, as well as other lines of canned goods, was reported as excellent.

▲ ▲ ▲

MORE than 100 grape pickers employed by the American Fruit Growers, Inc., went on strike for 40 cents an hour recently. They were being paid 35 cents an hour.

▲ ▲ ▲

D. WALTER WILLIAMS, representative of the Pacific Cranberry Exchange, has opened an office in San Francisco to assist there in the marketing of this year's crop of berries.

-just dip in!

No fuss, no muss, no grating

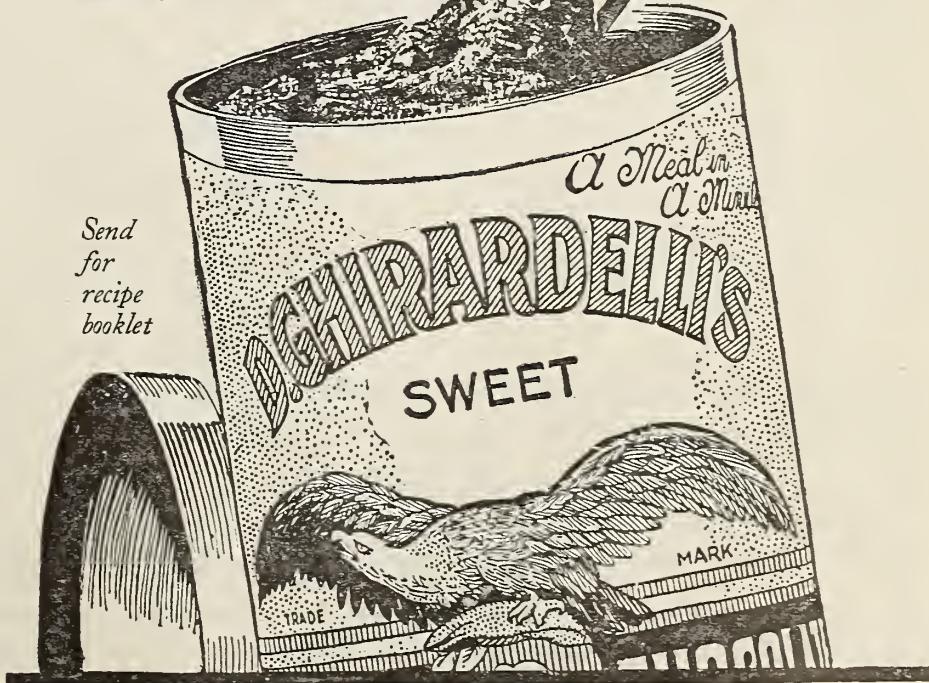
That's the beauty of Ghirardelli's Ground Chocolate—it's ready the moment you are! It's perfectly *ground*, ready for the spoon! Not only does this make Ghirardelli's the most *convenient* chocolate for baking and dessert making—but it means there's *no waste*. You can measure your needs to the fraction of a spoonful.

Say "Gear-ar-delly"

D. GHIRARDELLI CO.

Since 1852

San Francisco



GHIRARDELLI'S
Ground CHOCOLATE

With the Poultry

PROPER SIZE OF POULTRY HOUSE
THE proper size for a poultry building depends a great deal upon the number of fowls to be kept and the size of the flocks. From 25 to 100 seems to be about as many as is safe and economical to keep together. With flocks of this size about four square feet of floor space should be allotted to each bird, which will suffice in most cases where careful attention is given to cleanliness and ventilation. Three to three and a half square feet is enough for Leghorns in large flocks. If the fowls are kept in smaller flocks, a little more floor space per bird will be needed. Where the climate is so mild that it is unnecessary to keep the fowls confined, except for a few days at a time, and especially if the fowls are kept in small colony houses, less space per bird will be sufficient. The smaller breeds being more active and restless, require about as much room as the larger birds.

A POULTRY house should not be so wide that the sun cannot reach the back of the house, say poultry specialists of the United States department of agriculture, or it will be damp. Eighteen feet is a convenient width for a large house if there are no alleyways. The house should be built as low as possible without danger of the attendants bumping their heads against the ceiling. A low house is more easily warmed than a high one.

Be sure that your chicken house is tight on three sides and that there is no chance for a draft to strike the hens. If hen roosts are placed in a draft during the fall and winter, colds are sure to develop, which may develop in roup and other troubles.

▲ ▲ ▲

PREPARE FOR WINTER EGGS
THE time is at hand to begin preparation for a maximum egg crop during the cold months when eggs are highest in price. Get the poultry house and yards neatly fitted up. If you haven't a variety of proper feeds on hand lay your plans so you will be sure to have all that is needed at the height of winter. Leaving such things to take care of themselves when the time arrives is an

expensive bit of procrastination. It may prove to be the difference between profit and loss.

▲ ▲ ▲

POULTRY MEN who wish to have their flock produce the maximum number of eggs economically during the late summer and fall months should supply the hens with a ration carrying a liberal amount of protein. Meat scraps, skim milk or buttermilk provide an excellent food for this purpose.

▲ ▲ ▲

THE one sure way of having flocks free from lice is to prevent the lice from getting a start. It's a lot easier, too, than to give the vermin a chance and then have to fight them afterward.

▲ ▲ ▲

IF YOU haven't improved your flock by the purchase of good fowls of heavy-laying and pure-bred strains give the idea serious consideration. Others have found that money thus spent brought fine returns.

▲ ▲ ▲

TIT IS quite foolish to expect 200-egg pullets from 100-egg hens. Like still begets like in the poultry yard as elsewhere.

BETTER FRUIT'S FIRST BARGAIN DAY OFFER

(Good Until December 25, 1921)

Two Years for the Price of One!

This is YOUR Opportunity:

IF you are **NOW** a subscriber, to get **Two Full Years** ahead from the date your present subscription expires for \$1.00.

FRUIT two full years for \$1.00.

IF you are **NOW** a subscriber and want to give some friend a Christmas present of BETTER FRUIT, send \$1.00 and we will extend your subscription one year, also send your friend BETTER FRUIT for one year, thus giving two subscriptions for the regular price of one, or we will send BETTER FRUIT to your friend for two full years.

In other words, you may have as many Full Years' subscriptions as you want at 50 cents each, either all for yourself, or some for your friends.

Whereas this year you fruit men will make some money, we realize that you were all hard hit last year, and so to help just a little we are making you this reduced price. The price of \$1.00 applies to subscriptions within the United States; foreign subscriptions may be figured at one-half the foreign price, or \$2.00 for two years.

We need your support, and perhaps we can help you through the coming year. We are working for the very things which will help you most in the fruit game, but in order to put them through we must have subscribers. Use the coupons below **NOW** while you think of it, and save half the cost of your fruit paper.

This coupon for your own One or Two Years' Renewal.

Name _____

Place _____

State _____ No. of Years _____

R. F. D. _____ Box _____

A

This coupon for your friends' One or Two Years' Subscription

Name _____

Place _____

State _____ No. of Years _____

R. F. D. _____ Box _____

B

SYKES' SERVICE BULLETIN

Vol. I

Portland, Oregon, November, 1921

No. 3

Why Pack Sykes?

Does the hit-and-miss practice of close paper wraps, with corners of boxes stuffed with paper, or frequently a small apple wedged in to make a tight layer—produce the correct pack?

What is the answer—if you have SUPERIOR fruit—which should be sized correctly and packed correctly—if you expect it to keep in storage?

SUPERIOR fruit has a value. Is it not false economy to pack superior fruit as cheaply as possible—thereby taking all of the risks of common or cold storage?

Sykeing Superior Apples

Does it pay to pack GOOD fruit in the cheapest manner possible—with the cheapest wraps known—and under a hit-and-miss practice?

Have you a right to expect good RESULTS from such a pack? Is it not logical that you would get BETTER results from CORRECT sizing and CORRECT pack?

Until you use Sykes Safety Separator Wraps, you will never know how well your fruit will keep.

What Is Sykes Pack?

The Sykes Safety Separator Apple Wrap is a moderately thick flexible sheet of wood pulp, cut to fit the standard apple box.

Each layer or tier of fruit is separated from the one above and below by one of these Separator wraps. Each size of fruit has a special wrap insuring the proper position of the fruit in packing as well as preventing the individual apples from touching each other.

A series of cups are stamped in a mathematically correct position, according to the size of the fruit. A series of cuts in each cup provides tongues of paper between the individual fruits of each tier—the body of the wrap itself separating the layers or tiers—hence the name "Separator."

This is the SYKES SYSTEM—an interlocking of correctly sized fruit, correctly packed, forming one solid structure of fruit, the individual apples being separated from each other by these cuts or tongues of the cups. If there be any shrinkage during storage, each apple retains its position, the interlocking principle preventing any bruising, hence helping to prevent any decay.

How to Pack Sykes

The fundamental principle of the "Sykes System" is summed up in the term "bridging the arch"—in other words, an INTER-LOCKED structure. A special wrap is provided for each standard size of fruit. If the wrong wrap is used, the experienced Sykes packer detects the mistake quickly. If the fruit has been sized wrong, he quickly catches that error.

The first layer or tier MUST be placed CORRECTLY in position. It is the FOUNDATION of the "Sykes System."

The box is set flat on a flat table. A Separator wrap is placed in the bottom of the box. The first tier of apples is placed, blossom end down, in the cups of the wrap (the number and arrangement of cups varying with the size of the fruit). It takes but a few moments to place the first tier CORRECTLY. If the fruit has been properly sized, the individual apples will not touch each other, the spaces between the apples forming uniform triangles.

When the first tier has been placed, a Separator wrap is placed over the tier. The cups nest into the triangular spaces formed by the apples of the first tier. The fruit of the second layer is then placed in the cups, completing the second tier. Again, the apples of the second tier do not touch each other—the spaces between the apples again forming small triangles.

The third Separator wrap is placed in position. The cups again nest into the triangular spaces. This process continues until next to the top tier is in position.

A soft wood board, which will fit easily into the box, is used to press down the fruit uniformly—light pressure in the center, heavier on ends—LOCKING each tier into the triangular spaces in the tier below—in the layman's words, "bridging the arch."

The top tier is then placed in position, giving the required bulge at the center. The experienced packer soon learns how to make a finished job in placing the top tier or facing the box. To protect the top tier another Separator wrap is placed in position and the lid nailed fast.

Every tier or layer is thus uniformly wedged into the spaces below, with the exception of the first or bottom tier, which forms the foundation for the series of arches.

Oiled Wraps Popular

Following the several experiments made by Federal experts during the past two seasons, using various oil formulas, the use of oiled wraps appear to be the NEXT step in the evolution of Scientific Apple Packing.

Oiled wraps, it has been proven, reduce the amount of scald in storage—practically all of the experiments have proven most of the claims for oiled wraps.

At a trifling additional cost, Sykes Safety Separator Wraps, treated with an approved oil preparation, may now be had in limited quantities. Next season there will be an ample supply for all packers.

The oiled wraps, without doubt, has come to stay—progressive manufacturers are preparing to meet the demand.

Sykes Pack in Storage

YAKIMA ARTIFICIAL ICE & COLD STORAGE COMPANY
YAKIMA, WASHINGTON

April 24, 1920.
American Paper Co.,
Seattle, Wash.

Gentlemen: In reply to your inquiry regarding what we know of the Sykes Pack, and what we consider it, will say our experience with the pack has been with the shipping end only.

We placed some five different varieties of apples packed with the Sykes pack in storage, so that we could observe how they kept in pack.

The varieties stored were Romes, Winesaps, Ark Blacks, Spitzenergs and Delicious. While we still have these in storage, we opened them to make observations on about the sixth of April.

When opened, we were very agreeably surprised with the results. They showed practically no scald and very little decay.

These varieties, which were out of season, showed up very fine indeed, being hard and fine, much more so than one would expect at this time of year. Where there was any decay, will say that the apples were dry, and the paper of the pack was also dry, no decay having started next to those decayed.

In fact, we are ready to recommend this form of pack for its long keeping qualities.

Yours truly,

YAKIMA ARTIFICIAL ICE &
COLD STORAGE COMPANY

Sykes System

The Sykes Principle is that all round fruits should be packed in a manner forming mathematically correct triangles and arches. This calls for the CORRECT SIZING of fruit so that a certain number pack may be secured without having any waste space on the one hand, or without crowding the fruit, on the other.

"Sizing" under the Sykes System is not done under the iron-clad rule which has been in common use for years in packing round fruit. Under Sykes System sizes are governed solely by the dimensions and the shape of the carrier. NO OTHER system in packing follows this rule—this is one of the chief reasons why scientific packers MUST eventually accept and ADOPT the Sykes System.

If your supply house cannot furnish you with Sykes Safety Separator Wraps NOW—please notify BETTER FRUIT at once—and your order will be promptly filled.

EXCLUSIVE DISTRIBUTORS SYKES WRAPS

BLAKE-MCFALL CO., Portland, Oregon
AMERICAN PAPER CO., Seattle, Wash.

SPOKANE PAPER & STATIONERY CO., Spokane, Wash.
PACIFIC FOLDING BOX FACTORY, San Francisco

Some Reliable Northwest Nurserymen

Blight-Proof SURPRISE PEAR ON JAPAN PEAR ROOT

Tests made in every conceivable way in the experimental blocks along side of and at the same time with all leading varieties of pears have proven the impossibility of spreading pear blight more than a trifling distance beyond the point of inoculation.

Plant the blight-proof Surprise and insure against loss. The second year top-work to Bartlett, Bosc, or any desired variety and you have the most blight resistant trunk and framework work yet developed. This method is endorsed by leading horticultural experts after extensive experiments. Thousands of these trees have been planted the last few years in California, Southern Oregon, and in Washington. Our buds were secured direct from Prof. Reimer of the Southern Oregon Experiment Station, Talent, Oregon.

In our four hundred-acre nursery located on clean new soil of the Yakima Indian Reservation we grow a complete assortment of commercial fruit trees and general nursery stock. Rich soil, a long growing season, moisture under control and perfect fall weather for maturing our stock enable us to produce and deliver nursery stock unsurpassed for vigor, thriftiness and root system.

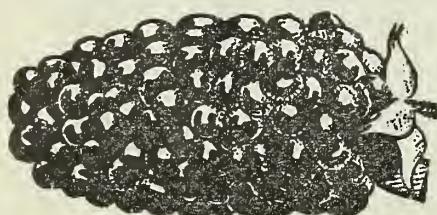
WASHINGTON NURSERY CO.

TOPPENISH, WASHINGTON

Salesmen Everywhere—More Wanted



CORY'S THORNLESS



MAMMOTH BLACKBERRY

The greatest horticultural novelty of the century. Very large, early, sweet, coreless and almost seedless, with rampant growing vine which is absolutely thornless. Millions will be sold as fast as they can be propagated. Get your order in early for next season. Last spring I was deluged with orders which could not be filled and I can promise but a few thousand for the coming season. Price, 50 cents each, 3 for \$1.00; \$3.00 per dozen. Will be well packed and sent prepaid by parcel post to any address. Descriptive catalog free.

ISAAC F. TILLINGHAST

Seed and Plant Specialist
212 Podel Street Santa Rosa, California

An Early Order For Fall or Spring Delivery

Placed with

SALEM NURSERY COMPANY

428 Oregon Building
SALEM, OREGON

Will receive careful attention and give you good choice of varieties

Additional Salesmen Wanted

Lucky Cross and Unique

Two never failing, double-crop varieties of strawberries which we have perfected.

WHY grow only ONE crop, when you can grow TWO on the same plants?

The increasing number of growers sending to us, proves that our plants are superior. Write us for more detailed information regarding these money makers.

Evergreen Plantation

New Meadows, Idaho

Reliable Trees and Plants

We have a complete line of guaranteed nursery stock: apple, pear, cherry, peach, apricot, prune and nut trees, gooseberries, currants, etc., which we offer planters at very close prices. However, orders should be placed at once to get the best grades. Send us your want-list today.

Benedict Nursery Co.
185 East 87th St. N. Portland, Oregon



FRUIT TREES NUT TREES PLANTS, ETC.

We offer a good line of Italian, French Improved, Double X and other prune trees, propagated from selected scions. Walnut grafted, Filberts, Apple, Pear, etc. Berries, Gooseberries, Currants, Plants, etc. We have something of interest for you; try our inexpensive selling system; send for Planters' List; 31 years in business.

Carlton Nursery Co.

Groner & McClure

Pioneer growers of grafted

Vrooman Franquette

Walnut Trees

Heavy and Early Producing Stock
at Reduced Prices

A good market is always assured for Oregon Grown Walnuts. Write for leaflet, "Walnut Growing," and prices.

Groner & McClure

Address Route 2, Hillsboro, Ore.

Bees and Beekeeping

Edited by AMOS BURHANS

WHEN I first began keeping bees I went out into the yard one evening and opened a hive by prying the lid off. The reception I had was a warm one. I'll never forget it. Though I had on gloves and veil, the bees made an attack on all fronts, actually hanging between me and the hive a curtain of stings, a great many of which reached through.

So I learned from actual experience that I had gone at it too rough-shod and entirely unscientific. First, I had opened the hive at the wrong time of day. Between the hours of 10 and 4 on a real bright, sunny day is best. Second, I found on looking the matter up by consulting the books of the beemasters and several beekeepers that I should have used some smoke.

Then after I found out about the smoke I learned there were few ways only in which it can be successfully used. You can use too much of it and you can use it the wrong way. After a few years of experience I have adopted an almost standard way of doing the trick. I call it a trick, because so many tell me that it must be a trick when I easily open their hives which, they say, contain hostile bees.

A GREAT beekeeper by the name of Doolittle taught me the idea of thumping a little on the top of the hive before smoking. He said this helped to get the bees roaring, and when you could hear them roaring it was a sure sign they were filling themselves with honey. Immediately after you thump on the top of the hive, put the muzzle of the smoker down at the entrance and gently but firmly drive the entrance guard bees inside. Do not give them too much smoke. Three or four puffs of a smoker that is going good will be plenty. Lots of times I do not give them more than two. Rotted wood or excelsior make a white smoke. It is best. Don't use greasy rags.

In a few seconds they will be busy inside getting ready to be disturbed. That is, they will fill up on honey. This makes them much more peaceable than to try handling them without warning.

Then raise the cover carefully and slowly put the hive tool, if necessary, under the edges, prying up. A little practice will show you how to do this with the right hand and at the same time hold the smoker with the left. As the cover comes up, gently blow a little smoke across the tops of the frames, but do it quickly. Do not give the bees time to get into the air and at you. As they run down between the frames to get away from the smoke you can soon tell when to stop smoking. I make it a rule not to blow the smoke down between the frames unless it is to clear the bees out of a super. I almost never send the smoke in between the frames of the brood chamber.

BEES are quick to learn, I think. Some of the hives that I handle oftenest are easier to open and work with than those that get less handling. Also there is a difference in the way bees act. Some colonies are gentler than others, because they may be bred from a queen that breeds in them a gentler instinct. Also, there is a difference in the way bees act on account of weather. On a cold, wet day when the hive is full of field bees you will find it harder to handle them than when it is bright and warm and the field bees are at work. Also, remember that as a rule a pure-bred three-band Italian queen of a good strain of working, gentle bees will produce gentler bees than a black common queen, whether she be wild or in a bee yard.

But go at the opening of the hive gently. Don't be in a hurry. Remove the frame nearest the side you are working on to make room to handle the others. If there is a scarcity of nectar in the fields there will be robbers about

to get into the open hive, so have a burlap cloth handy to cover over the open hive as you remove the frames for examination. Be quiet, but do the job as quick as possible. In spring and fall work fast to keep from chilling the brood. As the bees come up from between the frames just give them a bit of smoke and down they will go about their business.

IT IS a simple trick to grow excellent rhubarb for the table in winter time, provided the preliminary steps are taken in the fall, says Prof. J. R. Hepler of New Hampshire college. Old clumps of rhubarb should be dug up late in the year with as much dirt as possible, and then left outdoors until they freeze solid. They should then be taken at intervals and set out in the cellar, being covered with two inches of soil and watered. The temperature should run from 50 to 65 degrees, and this may be maintained, if it is a cool cellar, by a lamp in a small section blanketed off. After forcing the roots are worthless, but young roots, one year from seed, are excellent for the purpose. The rhubarb will be found a little milder and more tender than that grown outdoors.

AMERICAN GROWN
FRUIT TREE STOCKS

Apple Seedlings, Straight or Branched. Also Pear Stocks from French and Japan Seed, American Plum, Mahaleb Cherry and Peach Seedlings in all Grades. Car Lots to Central Points.

Foreign Grown Stocks

Apple, Pear, Mahaleb, Myrobalan, Quince, Manetti and Multiflora. All Grades. In Prime Condition. Can quote in France or out of Customs in New York or at Shenandoah, Iowa. Prices reasonable.

Remember our Complete Line of General Nursery Stock for Fall and Spring trade. We are now ready to do Business. Submit List of Wants for Prices to

SHENANDOAH NURSERIES

D. S. LAKE, President
SHENANDOAH, IOWA

Satisfactory Sales Service

Our facilities and connections for the proper distribution of carlots or less of

APPLES

assures prompt and satisfactory returns to the grower. Let us figure with you before disposing of your crops.

AMPLE COLD STORAGE FACILITIES IN OUR OWN BUILDING

W. B. Glafke Co.

COMMISSION MERCHANTS

East Third and Alder Streets

PORLAND, OREGON



A grade
for each type
of engine

STANDARD OIL COMPANY
(CALIFORNIA)

Keeps
your
tractor
on the job.

Classified Advertisements

RATES, 4 CENTS PER WORD

NURSERY STOCK

TREES—All kinds of fruit and ornamental trees, vines, etc. Growers of general nursery stock. Lowest quotations given on application. Send us your want list. Can also use a few good salesmen. Albany Nurseries, Albany, Ore.

NURSERY STOCK—Italian Prune Trees and trees of all kinds. Berries and small fruits of all varieties. Buy direct and save 50 per cent. Brooks Nursery, Lafayette, Oregon.

APPLE TREES and a full line of nursery stock at reasonable prices; save agents' commission by ordering direct from nursery. Write for price list. Lawson Nursery, Gates, Oregon.

F FARMS FOR SALE

FOR SALE—17 55/100 acres all cleared in Willamette Valley 30 miles from Portland. Splendid fruit or nut land. \$200 per acre. Terms if desired. B. L. Herbert, 51 E 8th St., North, Portland, Oregon.

WANTED—To hear from owner of good ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

CUT-OVER and Developed Lands, 15 to 25 miles N. E. Spokane; extra good soil; spring brooks; grows grain, vegetables, hay, fruits; several developed ranches; few stock ranches; \$10 to \$20 acre; 10 years' time, 6 per cent interest. Free lumber. Write owners for free book. Edwards & Bradford Lumber Co., Elk, Washington.

TEN-ACRE ORCHARD HOME, \$4,000.00; 450 perfect 10-year-old apple trees, woven wire; new 5-room bungalow. Spring water piped to place. Ed Hathaway, Goldendale, Wash.

CALIFORNIA FARMS for sale. Write for list. E. R. Waite, Shawnee, Oklahoma.

WANT TO HEAR from owner having farm for sale; give particulars and lowest price. John J. Black, 197th street, Chippewa Falls, Wisconsin.

MISCELLANEOUS

BUY FROM GROWER—Save money. Puget Sound Narcissus Bulbs, better than imported stock, 60 cents dozen. German Iris, \$1 dozen. Peonies, 50 cents each. Delphiniums, Pyrethrums, Columbines, 80 cents dozen. Ornamental trees, shrubs, roses, berry bushes. Lowest prices. Catalogue. Joe Smith, Longbranch, Wash.

WANTED—By expert orchardist, management of orchard of some importance. Have thorough knowledge of all branches of the business, machinery, etc. Bond furnished, if desired. Box 284, Hood River, Oregon.

FOR SALE—Fresh extracted honey: five-gallon can, \$7.50; two cans, \$14.50; six ten-pound pails, \$8.50; twelve five-pound pails, \$9.00. A. L. Traner, Touchet, Wash.

WANTED—Position as housekeeper. Mrs. Fisher, Metaline Falls, Wash.

CLEAN VEATCH and grey seed oats for sale. W. W. Harris, Oregon City, Oregon.

PURE EXTRACTED HONEY—\$7.50 per five-gallon can; two cans, \$14.00. Everett Sauter, Touchet, Wash.

HOMESPUN TOBACCO—Chewing, 10 pounds, \$2.50; 20 pounds, \$4; smoking, 10 pounds, \$2; 20 pounds, \$3.50. Farmers' Union, Mayfield, Ky.

HONEY—A-1 extracted honey, 10-pound pail, \$1.70, postage paid to fourth zone, cash with order. W. C. Forcher, Grand View, Idaho.

HOMESPUN TOBACCO—10 lbs., \$2.50; 20 lbs., \$4, c. o. d. Ford Tobacco Co., Mayfield, Ky.

HOMESPUN TOBACCO—Chewing, ten pounds, \$3; 20 pounds, \$5. Smoking, 10 pounds, \$2.50; 20 pounds, \$4. Farmers' Union, Mayfield, Ky.

POULTRY

PETALUMA HATCHERY—Established 1902 by L. W. Clark. Chicks every Monday and Thursday, White and Brown Leghorns. Heavy laying strain. Safe delivery guaranteed. Send for prices and terms. L. W. CLARK, 615 Main St., Petaluma, Calif.

BLUE ANDALUSIANS—Stock and eggs for sale. D. M. Calbreath, Monmouth, Oregon.

PURE BRED Sicilian Buttercup cockerels, \$5 each. Charles Carland, Route 2, St. Maries, Idaho.

SALES MEN WANTED

MEN with proven ability capable of selling a line of high grade nursery stock on a commission contract. Weekly cash advance. Splendid territory may be had by answering immediately. SALEM NURSERY CO. 427 Oregon Building Salem, Oregon

Dehydrating Cranberries

THIS season a new dehydrated product will go onto the market rather extensively from Oregon and Washington via the plants of the King's Food Products. Experiments in dehydrating cranberries, conducted by President Earl G. Clark, of the company, for some time, have eventuated in a successful method, he has announced. As a result agreements have been reached with the growers, particularly in Oregon, whereby dehydrated cranberries are to be put out in large quantity.

It is declared that experiments with this berry at the Salem plant have disclosed that it is as well adapted for the dehydration process as most any fruit or vegetable now on the list. It responds readily to the restoration process. Both the growers and company heads feel confident that before many months pass the shelves of thousands of grocers over the land will carry dehydrated cranberries that grew in the bogs of Oregon and Washington.

Preventing Bruises

The problem of preventing the bruising of apples during picking has been satisfactorily solved by F. E. Thompson, a Yakima Valley grower. In Mr. Thompson's orchard the pickers used buckets. They are not permitted to dump the apples from bucket to box, this detail being delegated to one trained man, who dumps the apples for all the pickers. Plenty of buckets are supplied so the picker merely sets down the bucket he has filled and walks away with an empty one. By this system bruising is kept down to one per cent and Mr. Thompson says those in whose orchards it runs to two per cent and more are sustaining too great a loss.

GROWTH of the Eugene Fruit Growers' Association was detailed recently before the Chamber of Commerce by Manager J. O. Holt. He said the association has a paid-up capital of \$175,000 and 1000 members in Lane county. When the association took over its present plant 14 years ago the output was 9000 cases of canned goods. This season the output was 130,000 cases. Last season the association's dryer turned out 1,500,000 pounds of dried fruits. Last season the plant produced 50,000 gallons of cider and 20,000 gallons of berry juice was made this season.

FRUIT TREES

We are extensive growers of fruit trees adapted to the Northwest.

GET OUR PRICES

COLUMBIA NURSERY COMPANY

1490 Union Ave., No. Portland, Ore.

THE BEST IN TREES AND SHRUBBERY BOTH FRUITS AND ORNAMENT
E. A. Bennet Nursery Co.
1030 Chemeketa Street
SALEM, OREGON

Hotel Hoyt

200 Rooms—100 Baths
ABSOLUTELY FIREPROOF
Corner Sixth and Hoyt Streets
Phone Broadway 1960
PORTLAND, OREGON

NICE BRIGHT WESTERN PINE FRUIT BOXES AND CRATES

Good standard grades. Well made. Quick shipments. Carloads or less. Get our prices.
Western Pine Box Sales Co.
SPOKANE, WASH.
Catalog mailed on request.

Gebhardt, Scudder & Hendrickson

Attorneys at Law

610 Spalding Building, Portland, Oregon

Attorneys for Better Fruit Publishing Co.



The ARCADY Company

Advertising

That it pays to advertise is no longer a question. It has long since been settled that it does pay to advertise.

However, it pays only when the right goods are advertised in the right way. Most advertising debacles could have been prevented had proper advertising counsel been consulted.

Many potential advertising successes are lying dormant because the right manufacturer or merchant has not as yet met and talked with the right advertising man.

Arcady Building • 1296 Jefferson St., Portland, Oregon

Also PRINTING
MULTIGRAPHING
ADDRESSING
MAILING
MAILING LISTS

MAIN
8829

THIS PUBLICATION IS A PRODUCT OF OUR PRINTING DEPARTMENT

NOW is the time to send to

Milton Nursery Co.

MILTON, OREGON

For their 1921-22 Catalog
Full Line of Nursery Stock
"Genuineness and Quality"